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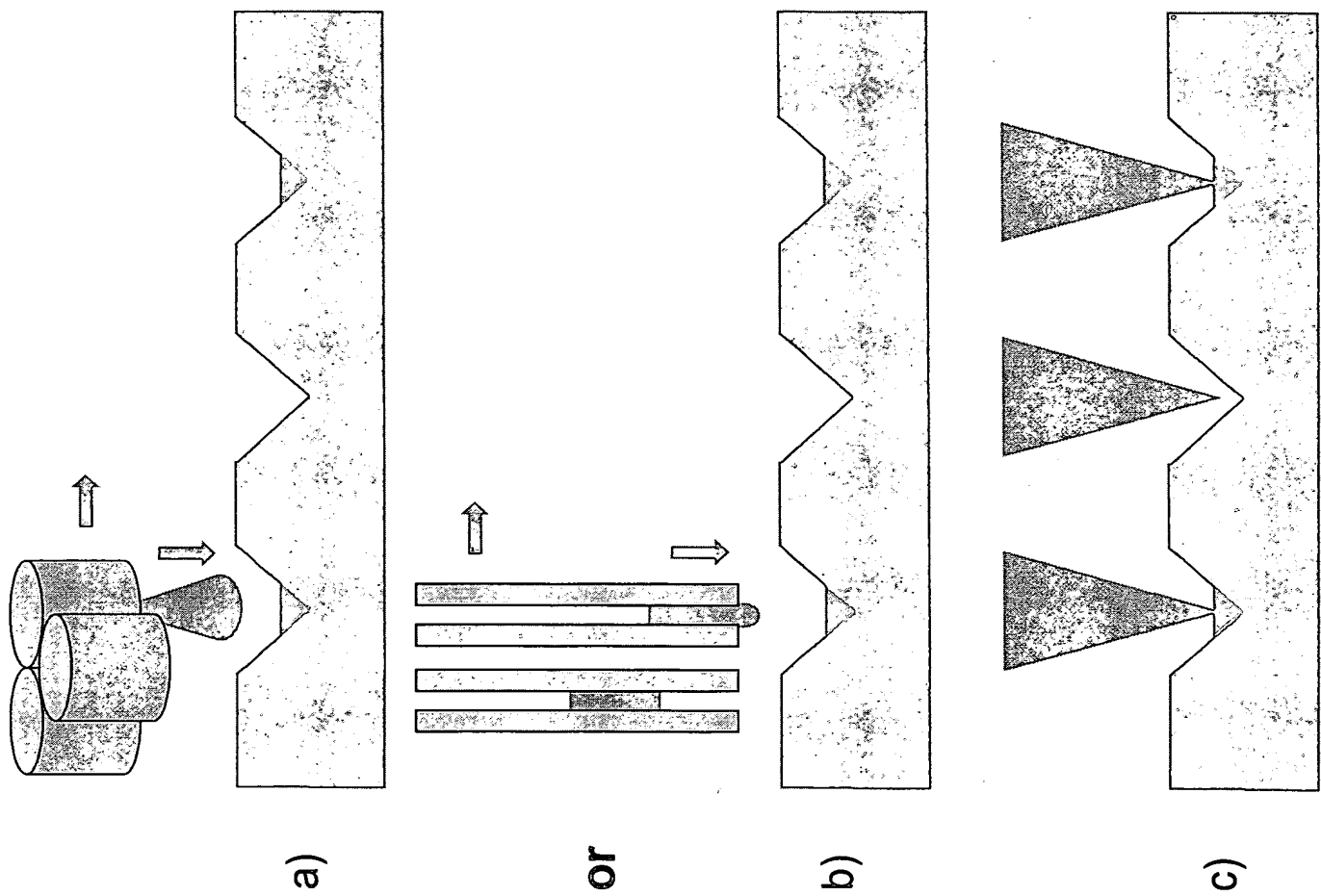


Fig. 1

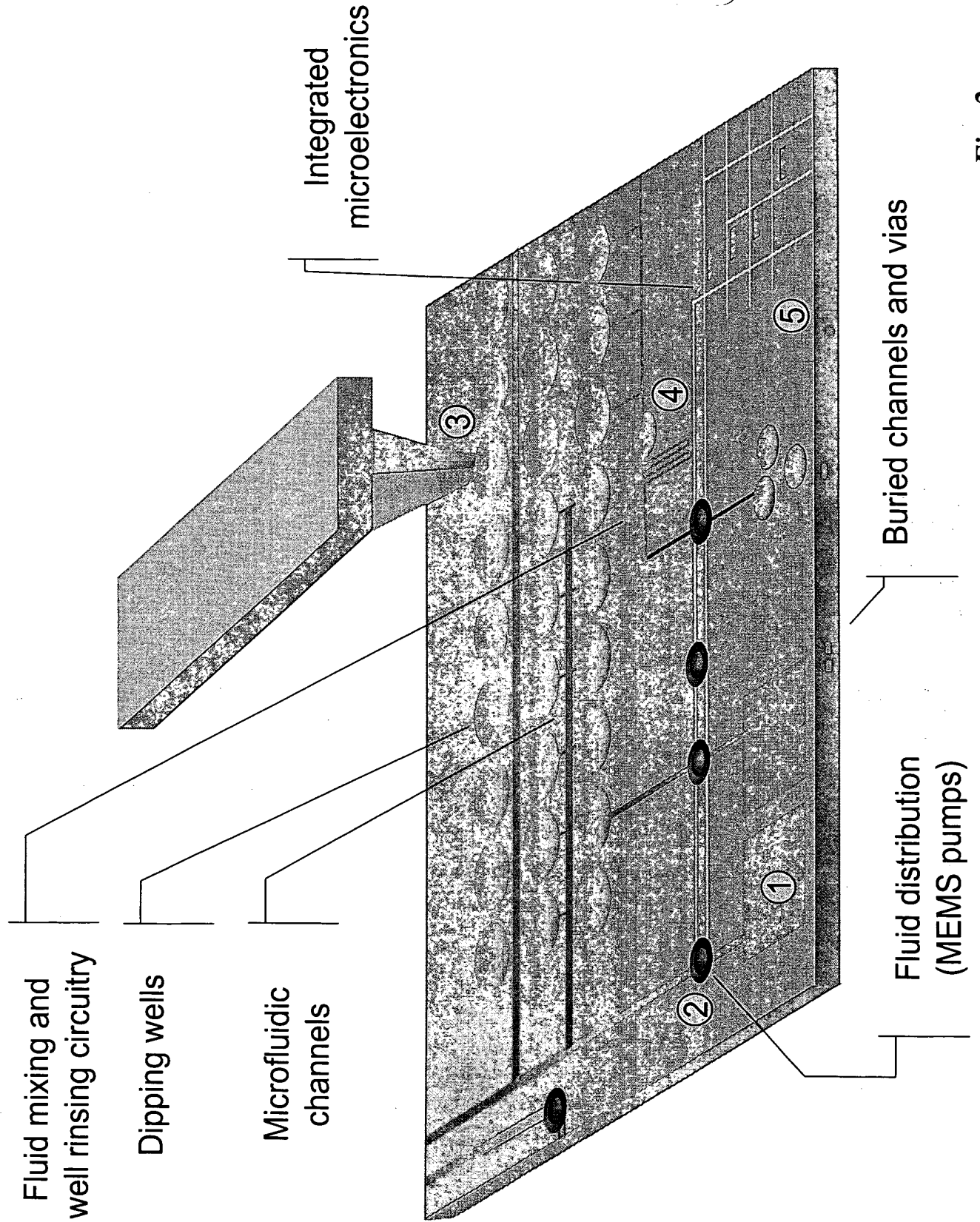


Fig. 2

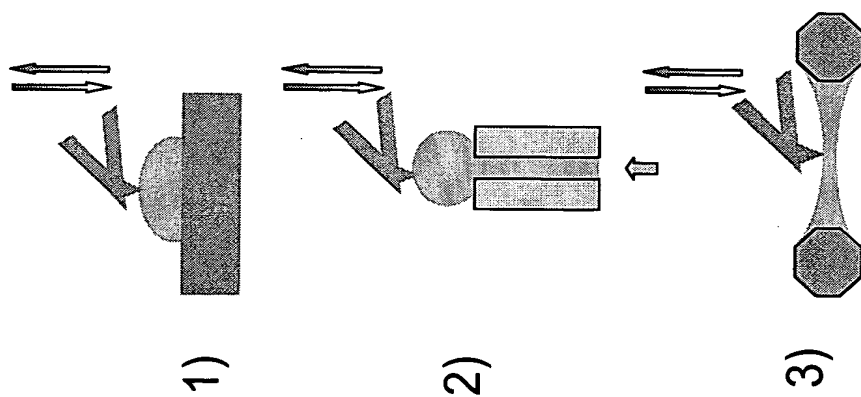


Fig. 3

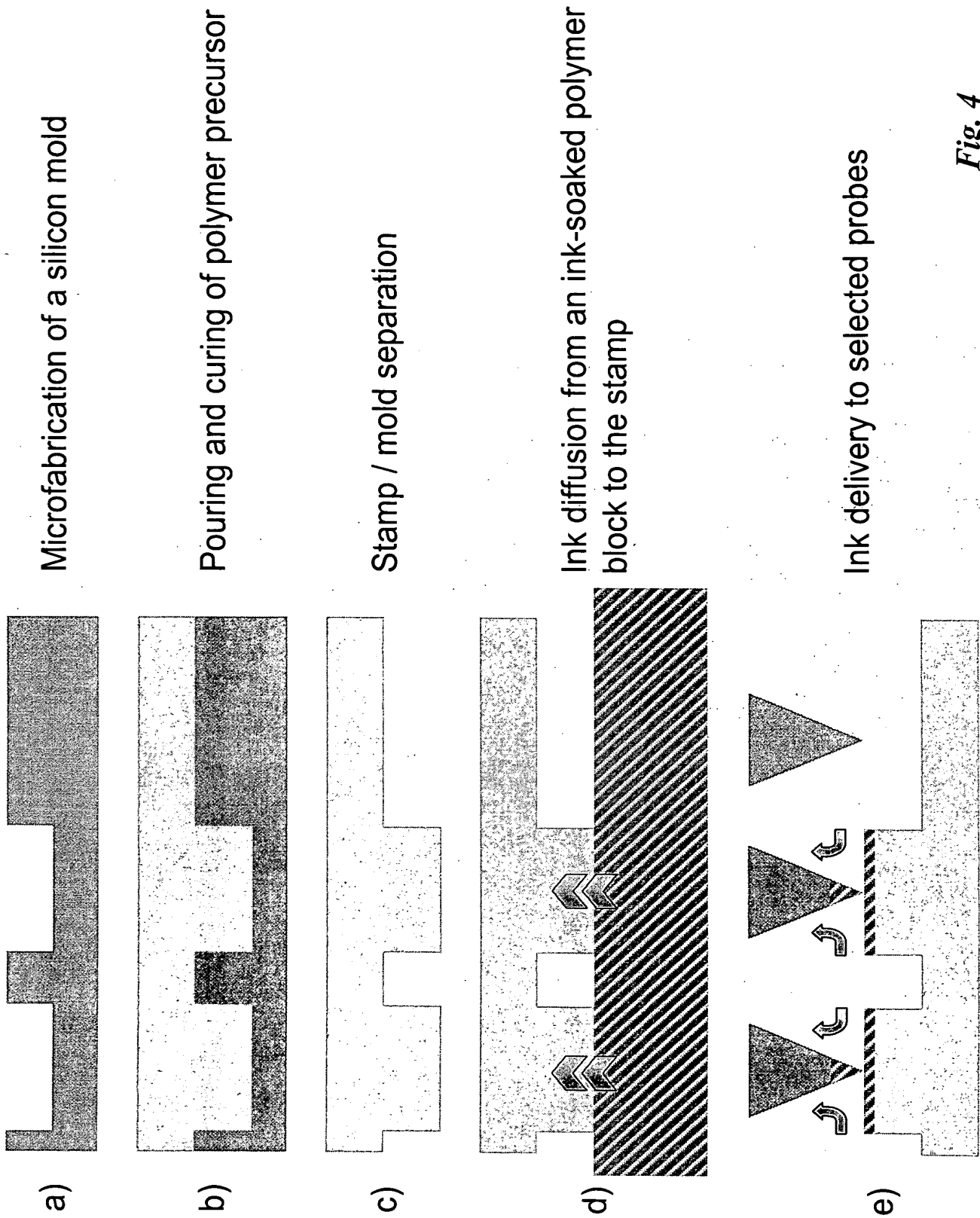


Fig. 4

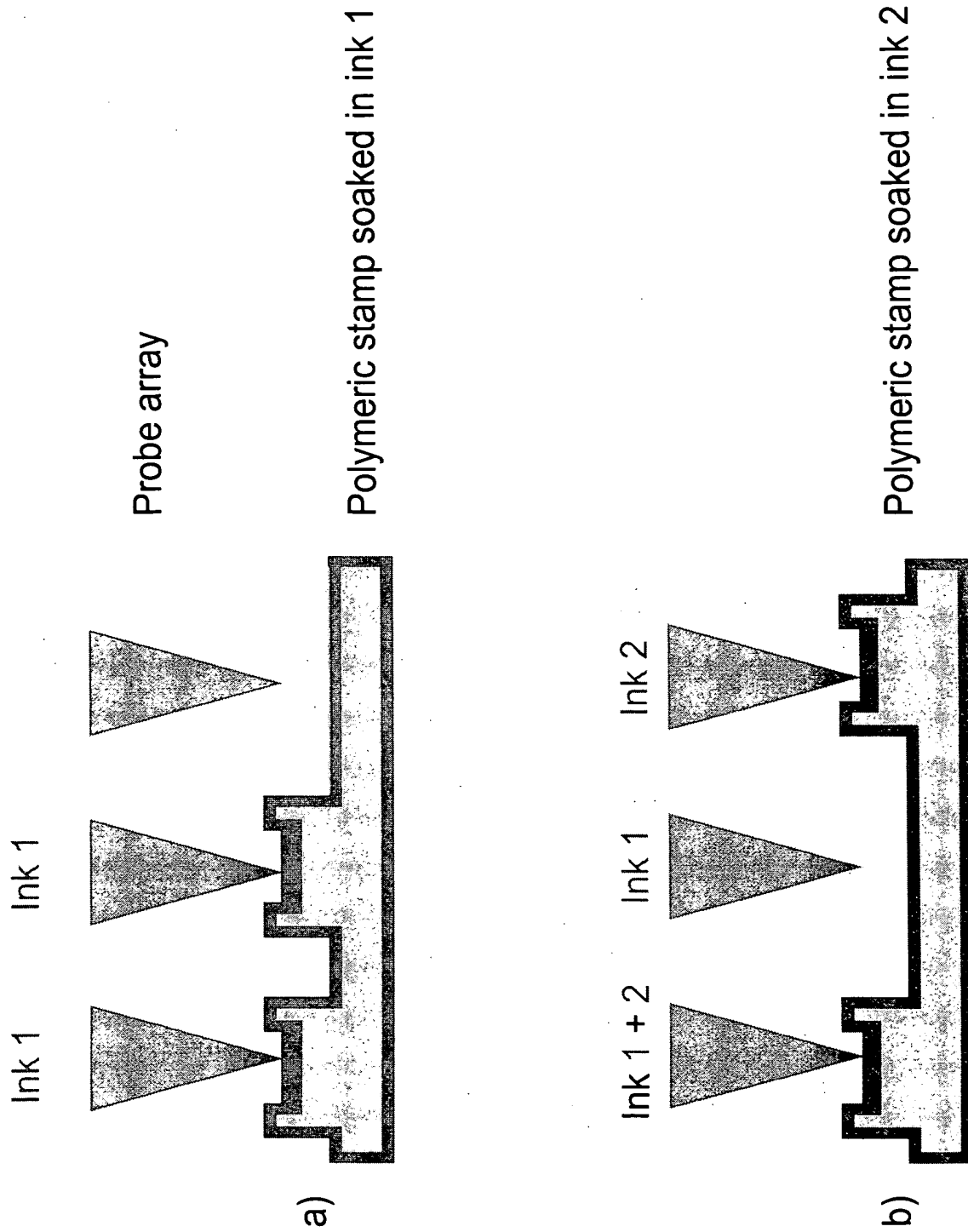
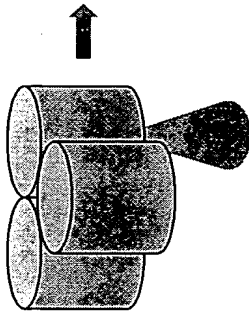


Fig. 5

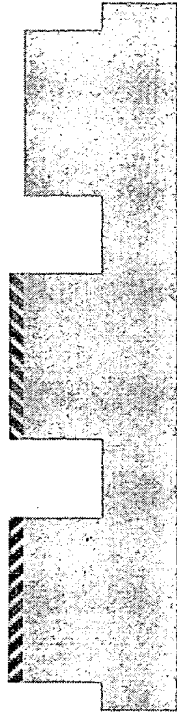
Polymeric stamp



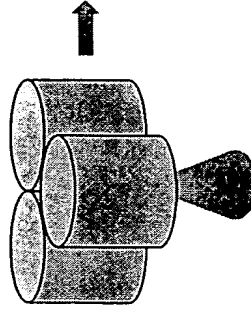
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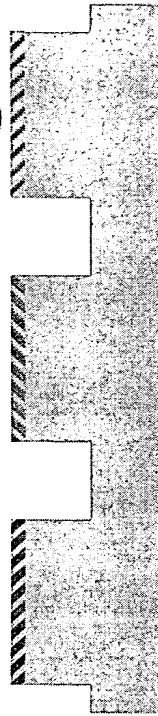
Inkjet printing to stamp



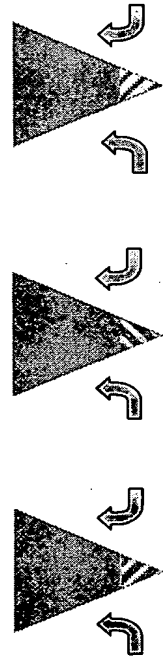
b)



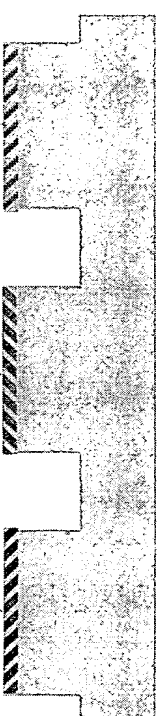
Repeat according to program



c)



Ink delivery to probes



d)

Fig. 6

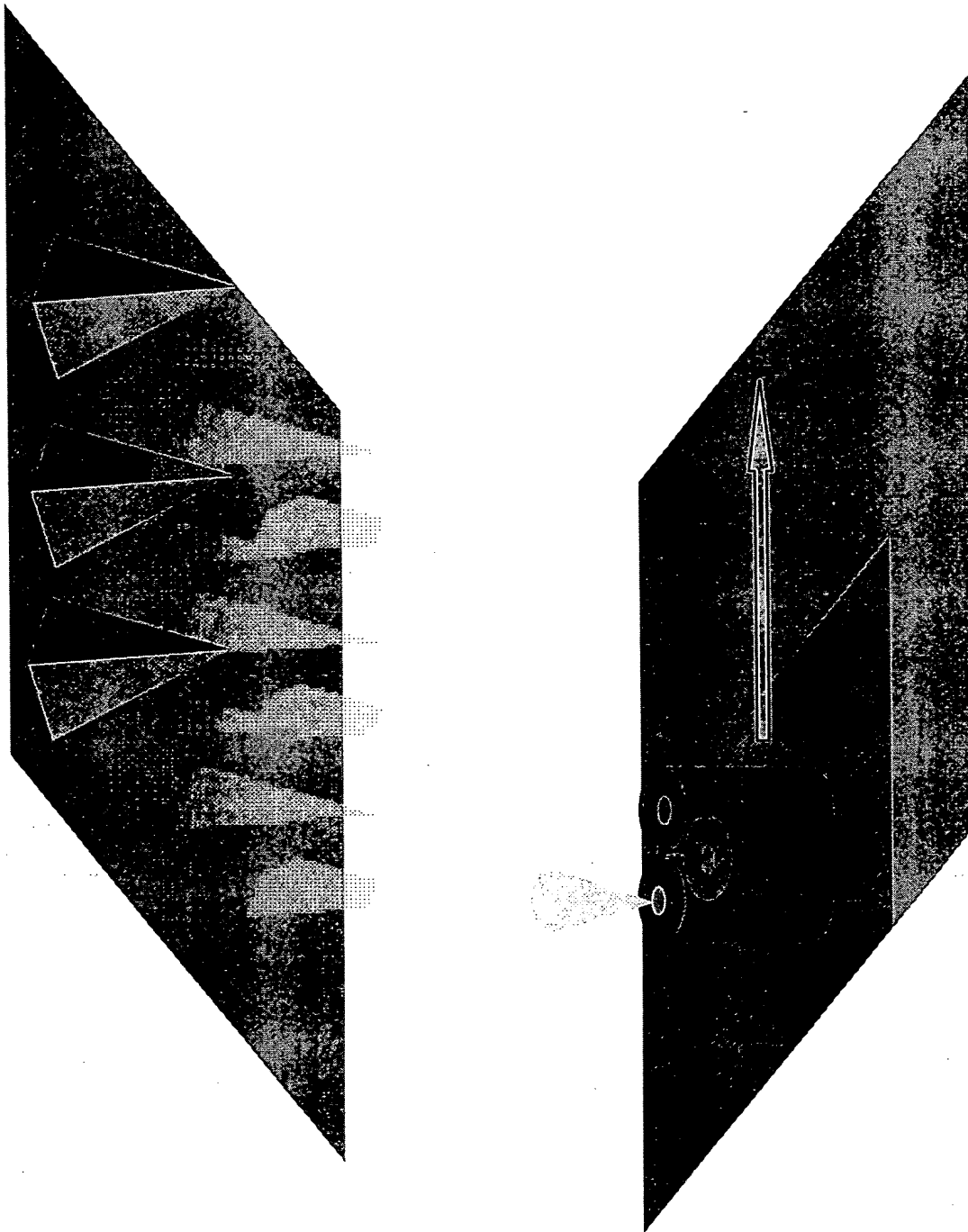


Fig. 7

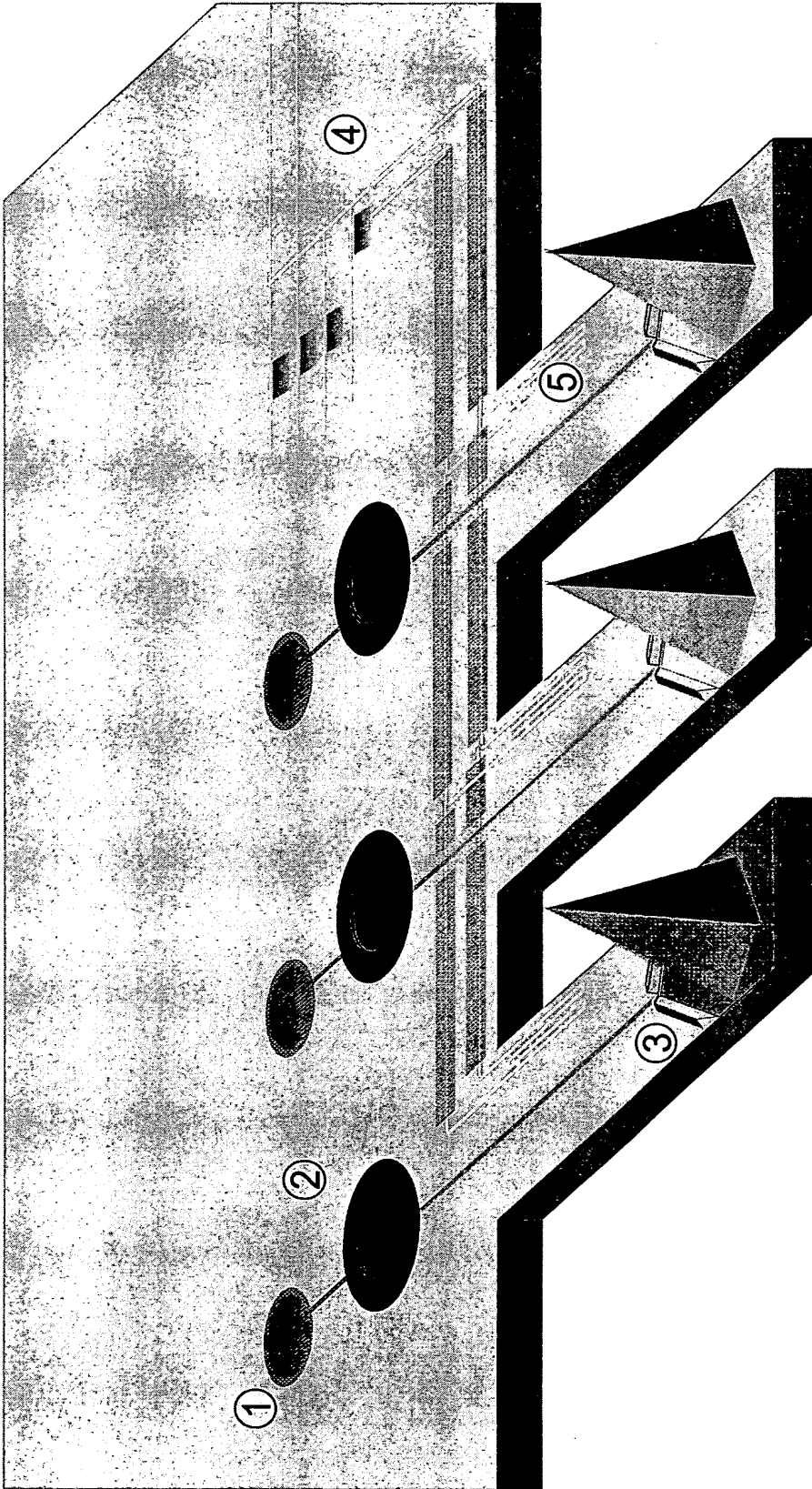


Fig. 8

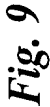


Fig. 9

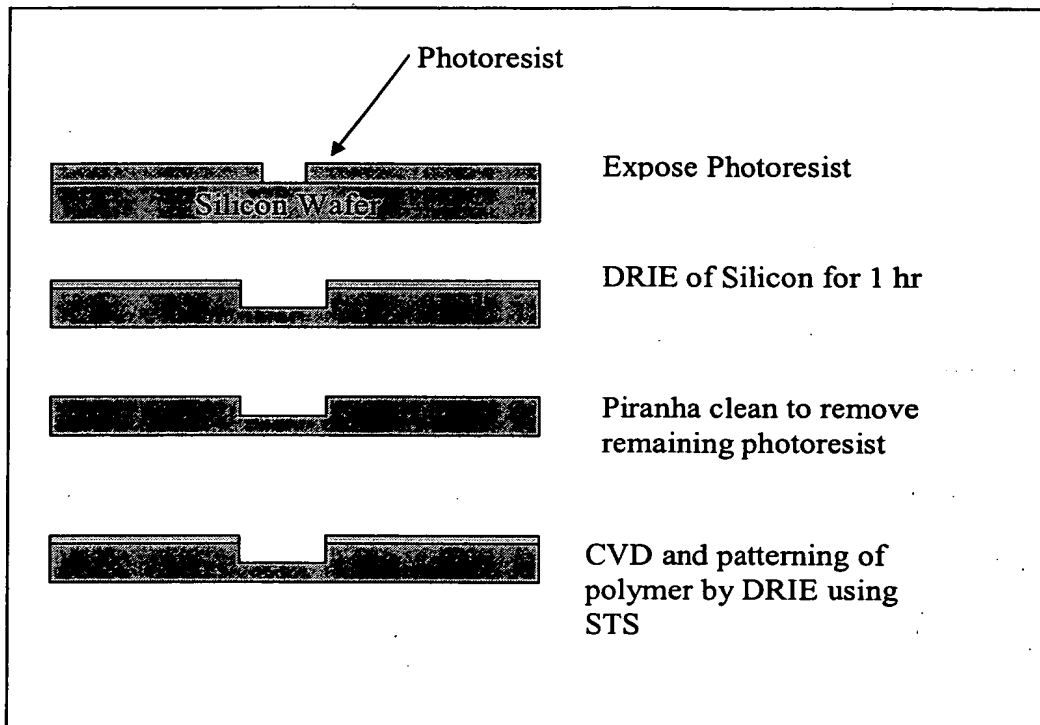


Fig. 10

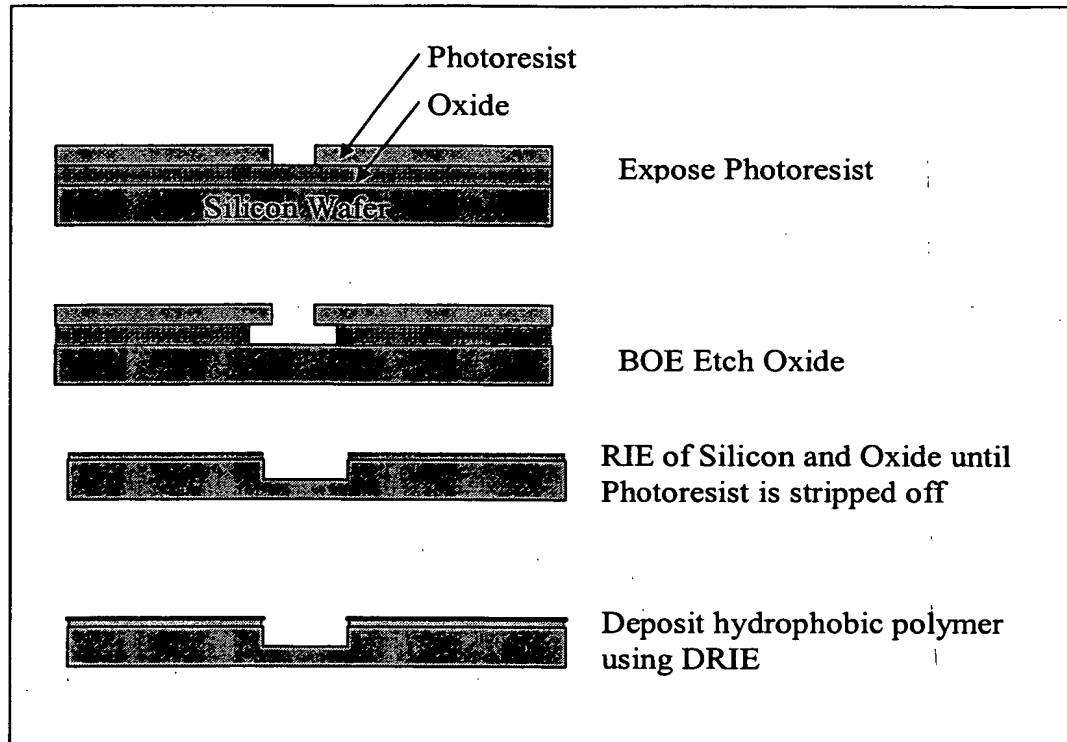


Fig. 11

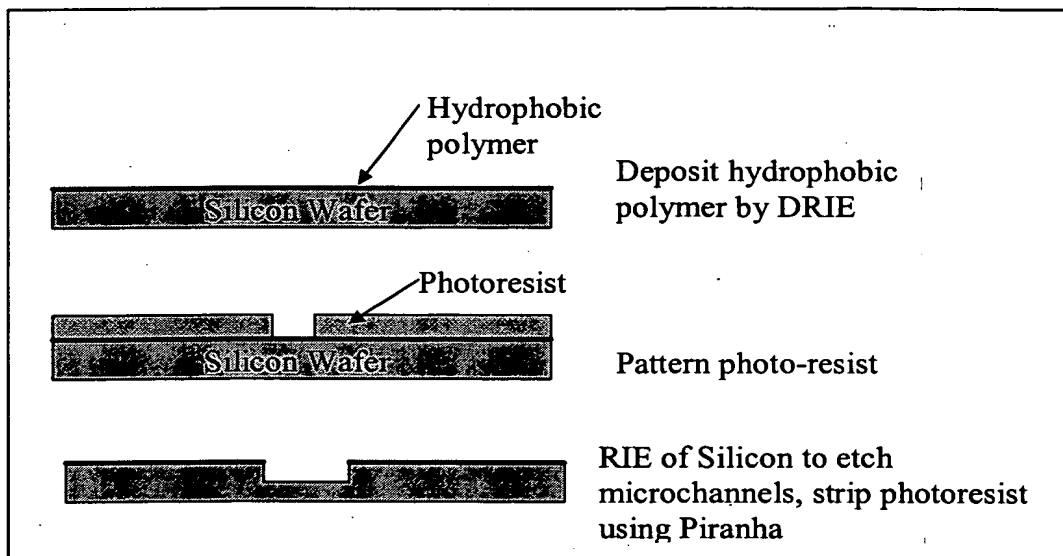
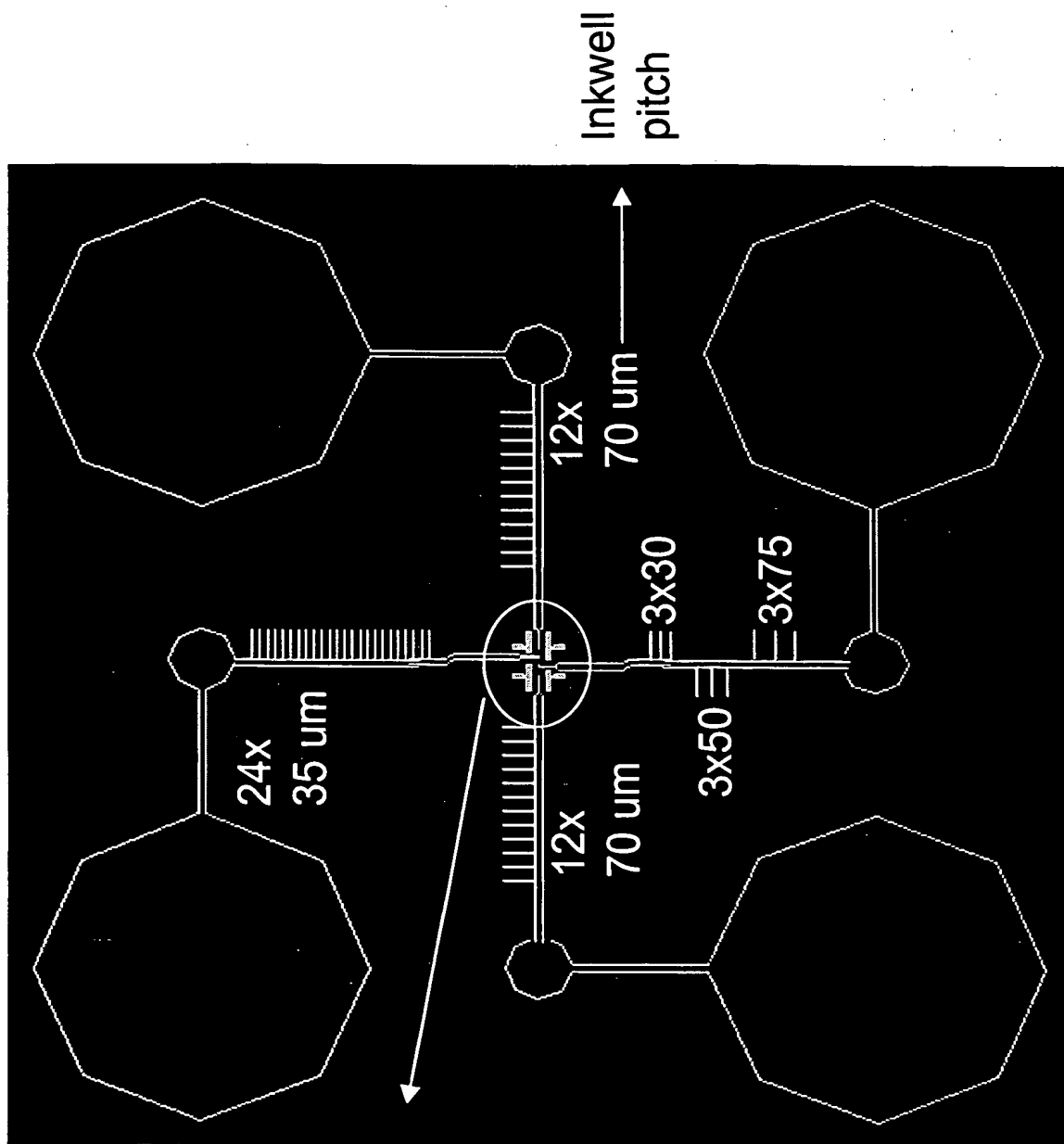


Fig. 12

All inkwells 10 micron diameter

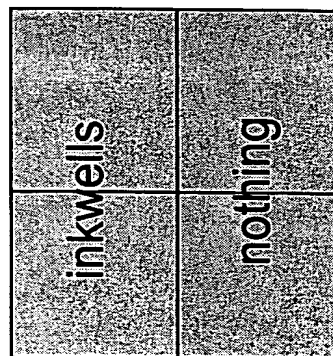


Die 1

30 um pitch

Inkwell
pitch

2x with
1mm reservoirs:



8 mm wide

Fig. 13

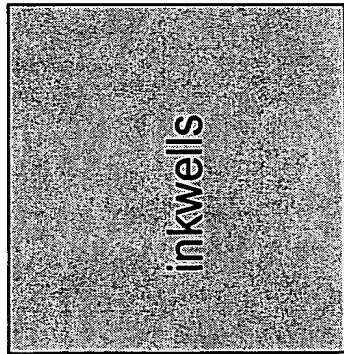
All inkwells 10 micron diameter

Die 2

Shift design down to
accommodate for bigger
spring clip

1x with

2.5 mm reservoirs:



8 mm wide

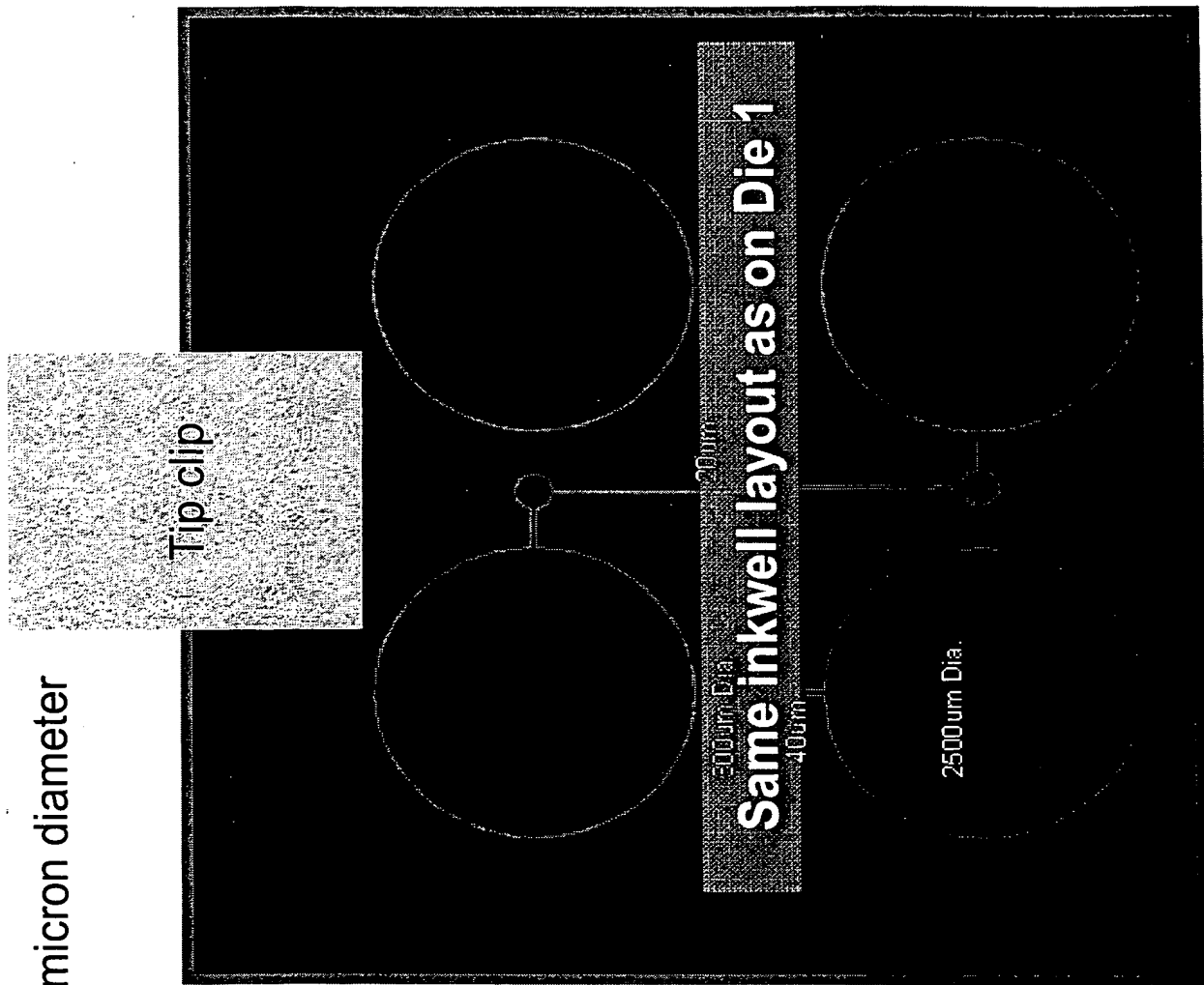


Fig. 14

For multiple ink inkwell designs.

Reason: Cantilevers in parallel with
the channel, thus add
45 degree angle

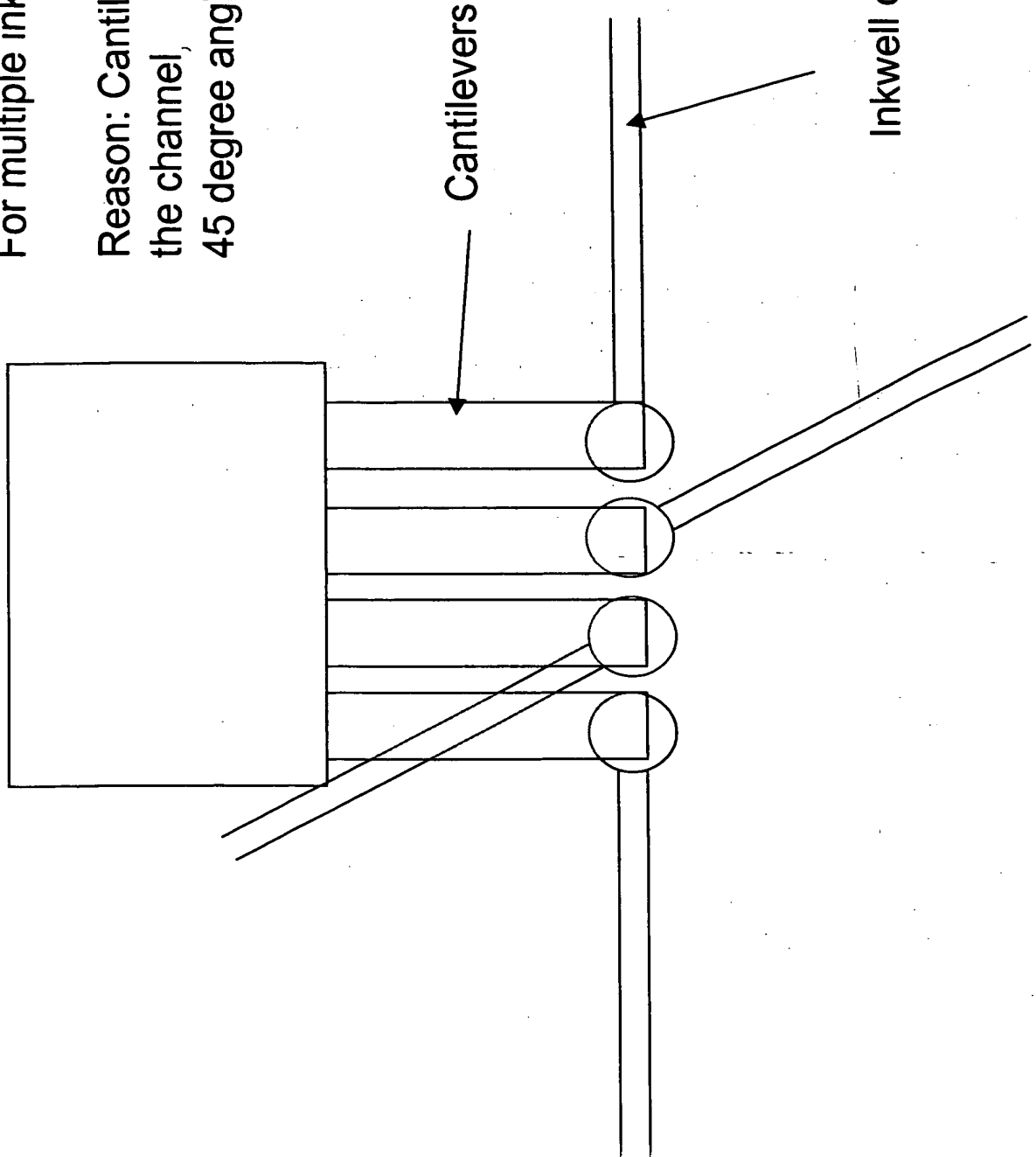
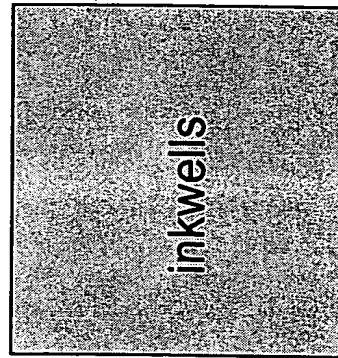


Fig. 15

Die 3

10x 1mm reservoir
Don't need inkwells on channels
All inkwells 10 micron diameter,
35 micron pitch

1x with
10 1mm reservoirs:



8 mm wide

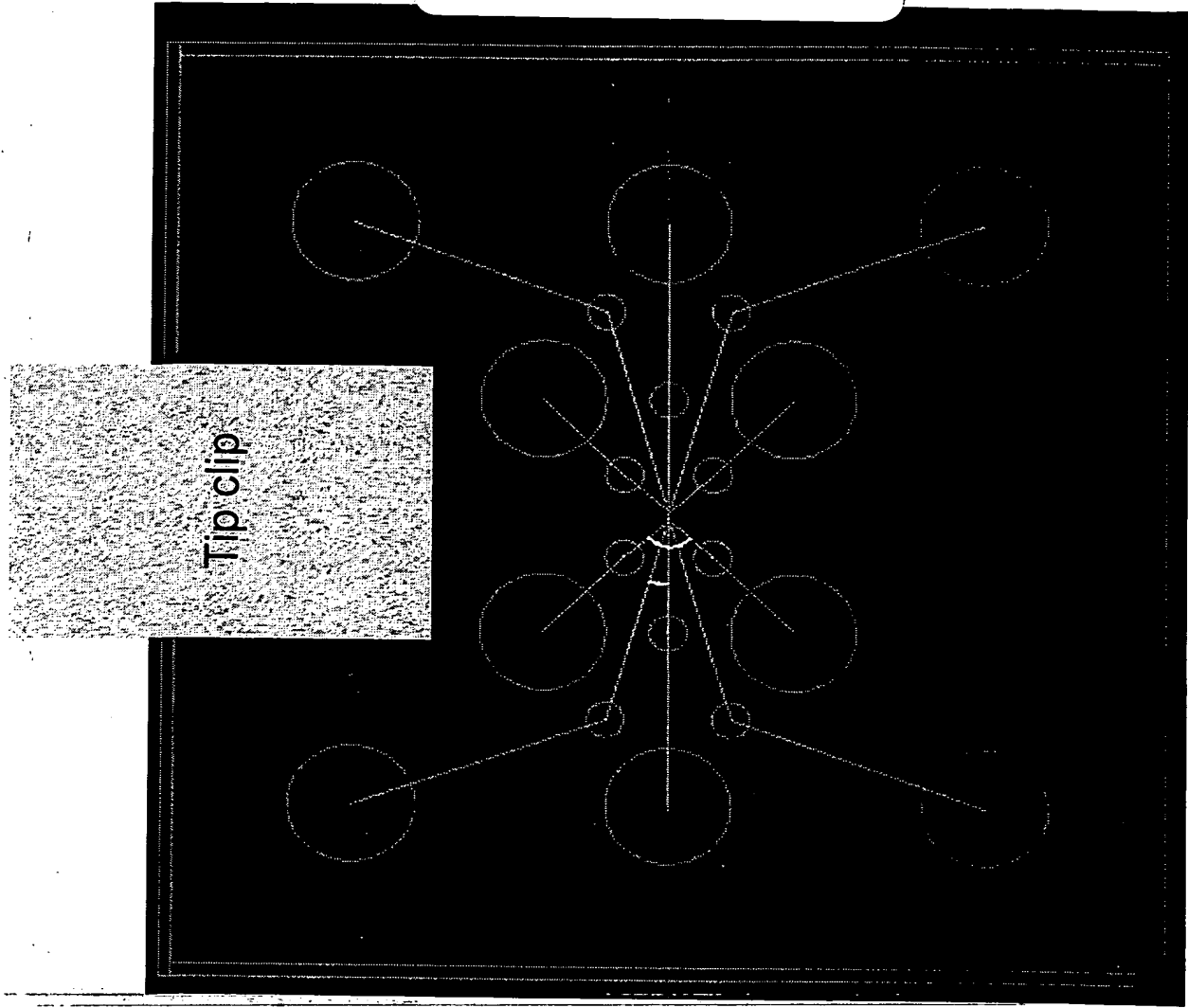
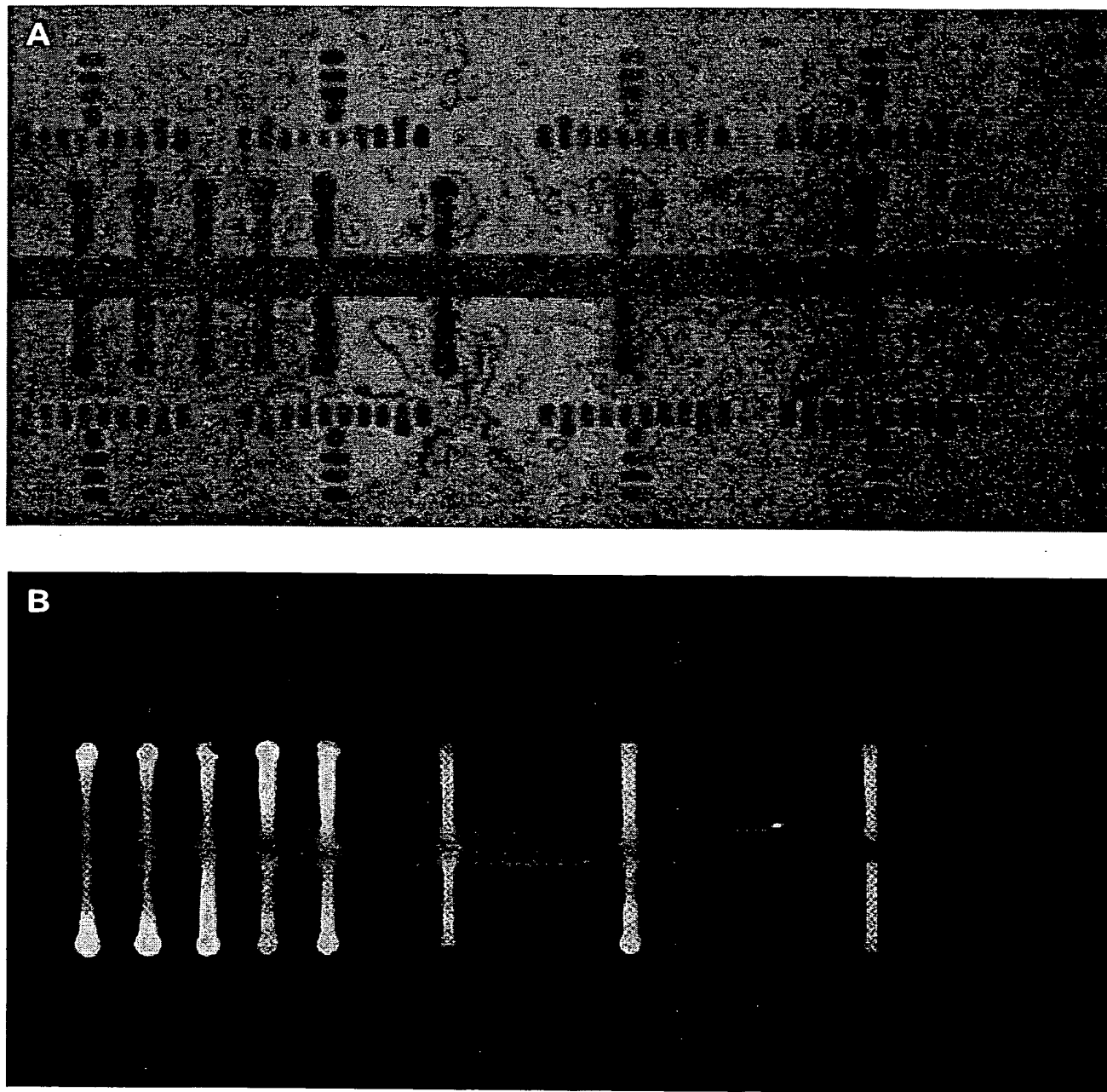


Fig. 16

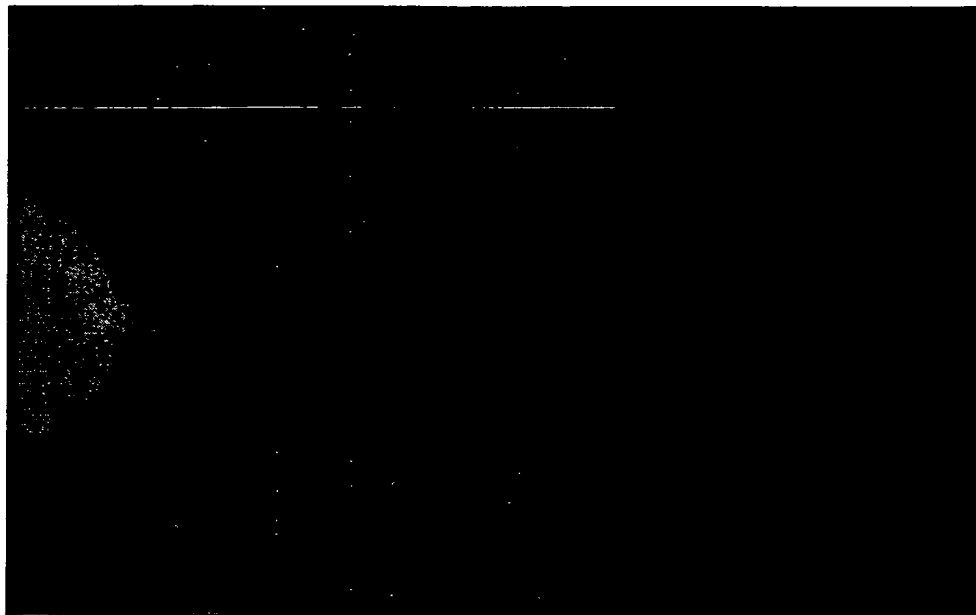
Ink-wells for Dip-Pen Nanolithography



Testing DPN Ink-wells using fluorescent dye.

(A) Phase contrast image of the ink-wells containing a fluorescent dye. (B) Fluorescence microscopy image of the same sample, showing the fluorescent ink flowing inside the micro ink-wells.

Fig. 17



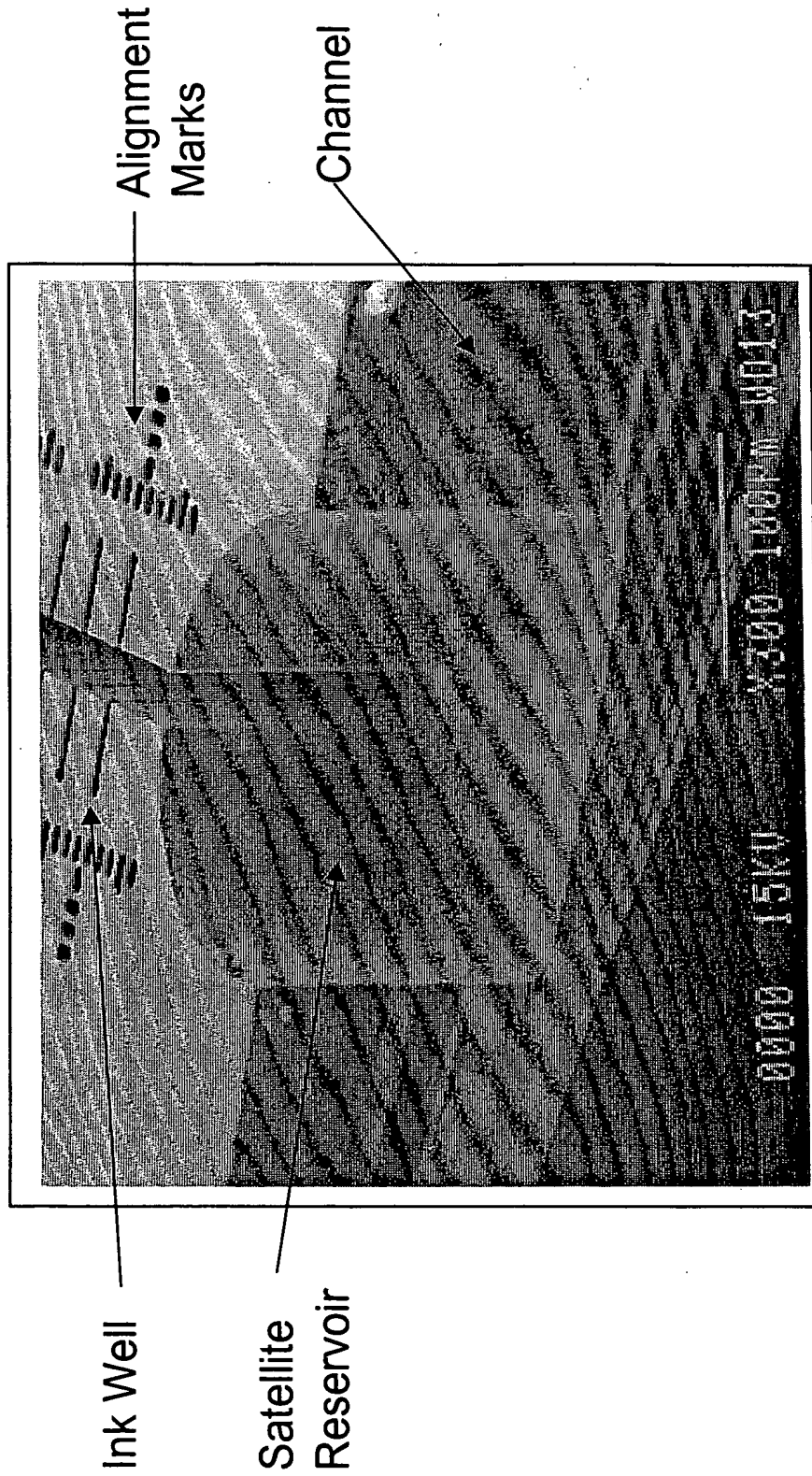
DPN Ink-wells using Ink and fluorescent dye.

**Fluorescence microscopy image showing the fluorescent ink flowing inside
the micro ink-wells.**

Fig. 18

Fabrication (SEM Pictures)

Title: METHODS AND APPARATUS FOR
INK DELIVERY TO
NANOLITHOGRAPHIC PROBE SYSTEMS
Inventor(s): Sylvain CRUCHON-DUPEYRAT
Appl. No.: UNASSIGNED
Atty. Dkt. No.: 083847-0203

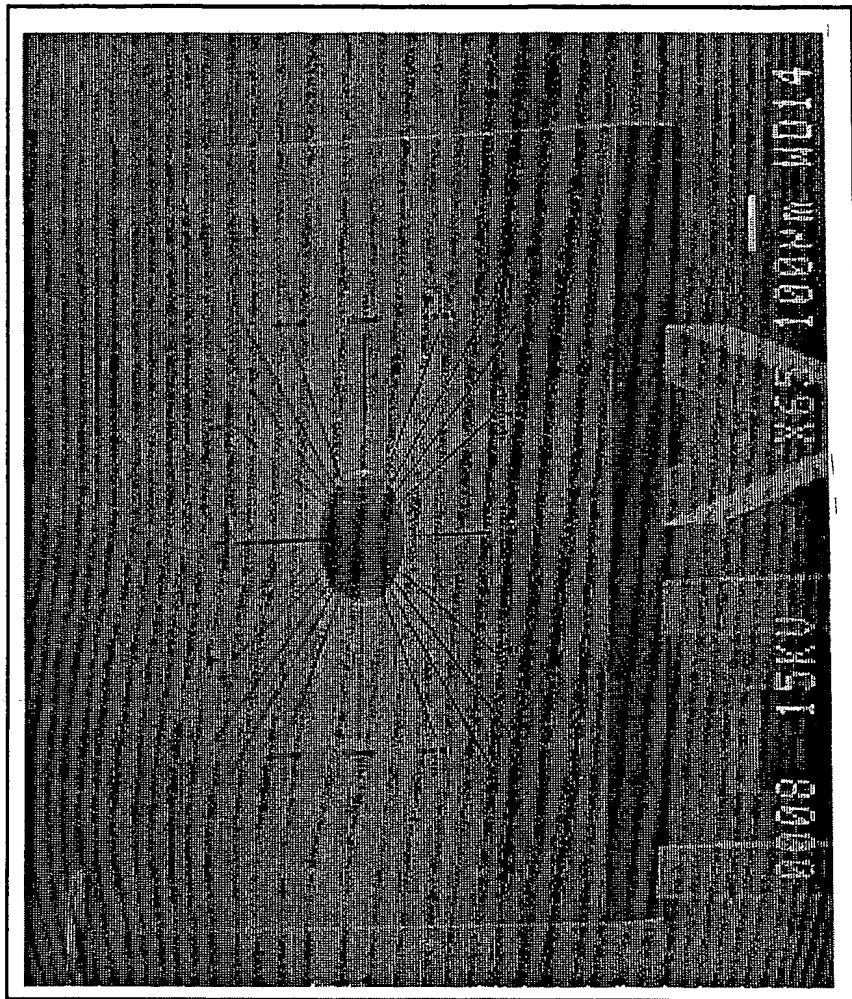


Satellite reservoir with channels, inkwells and alignment marks

Fig. 19

Fabrication (SEM Pictures)

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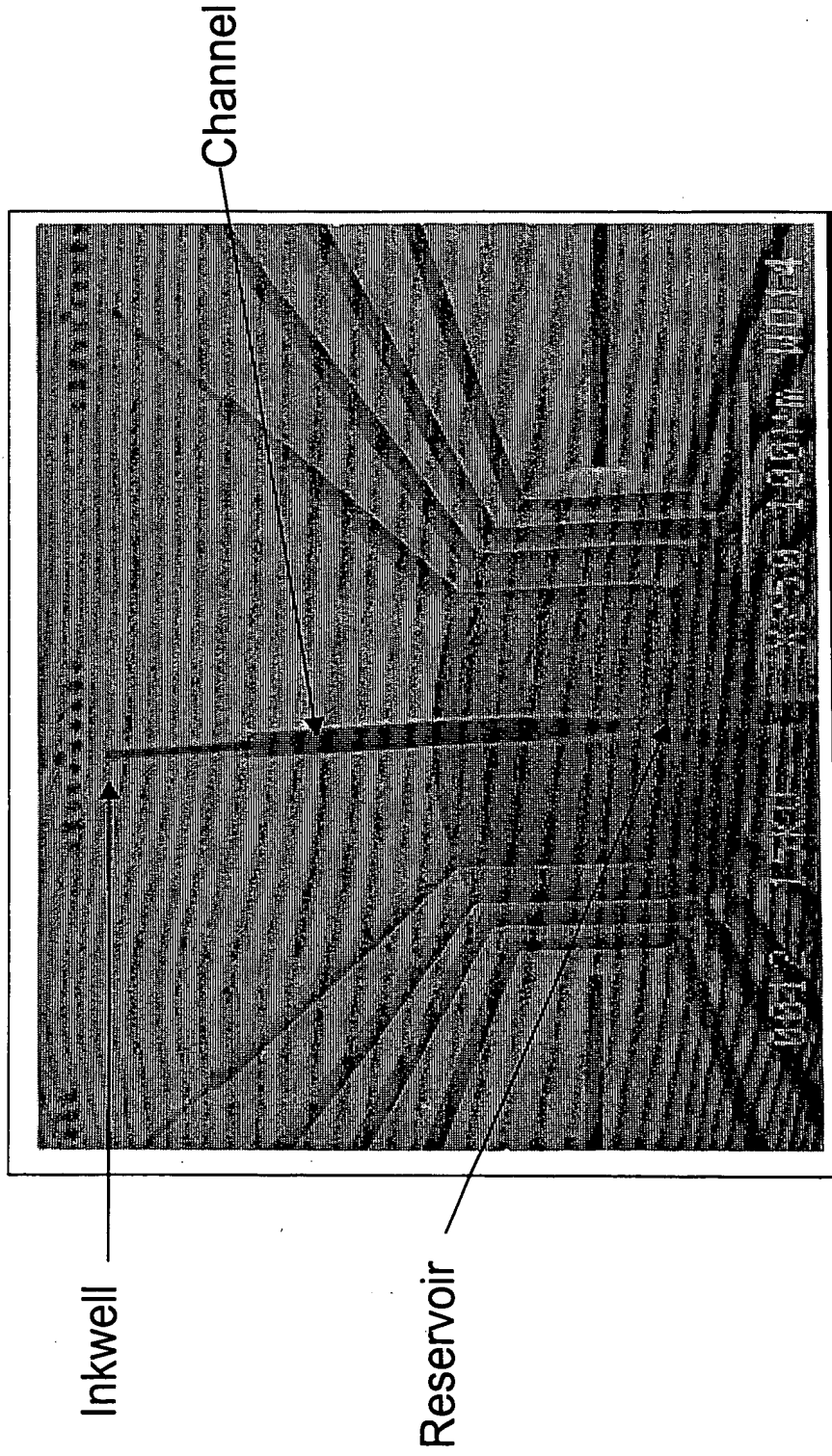


Overview of inkwell layout, reservoir and alignment marks

Fig. 20

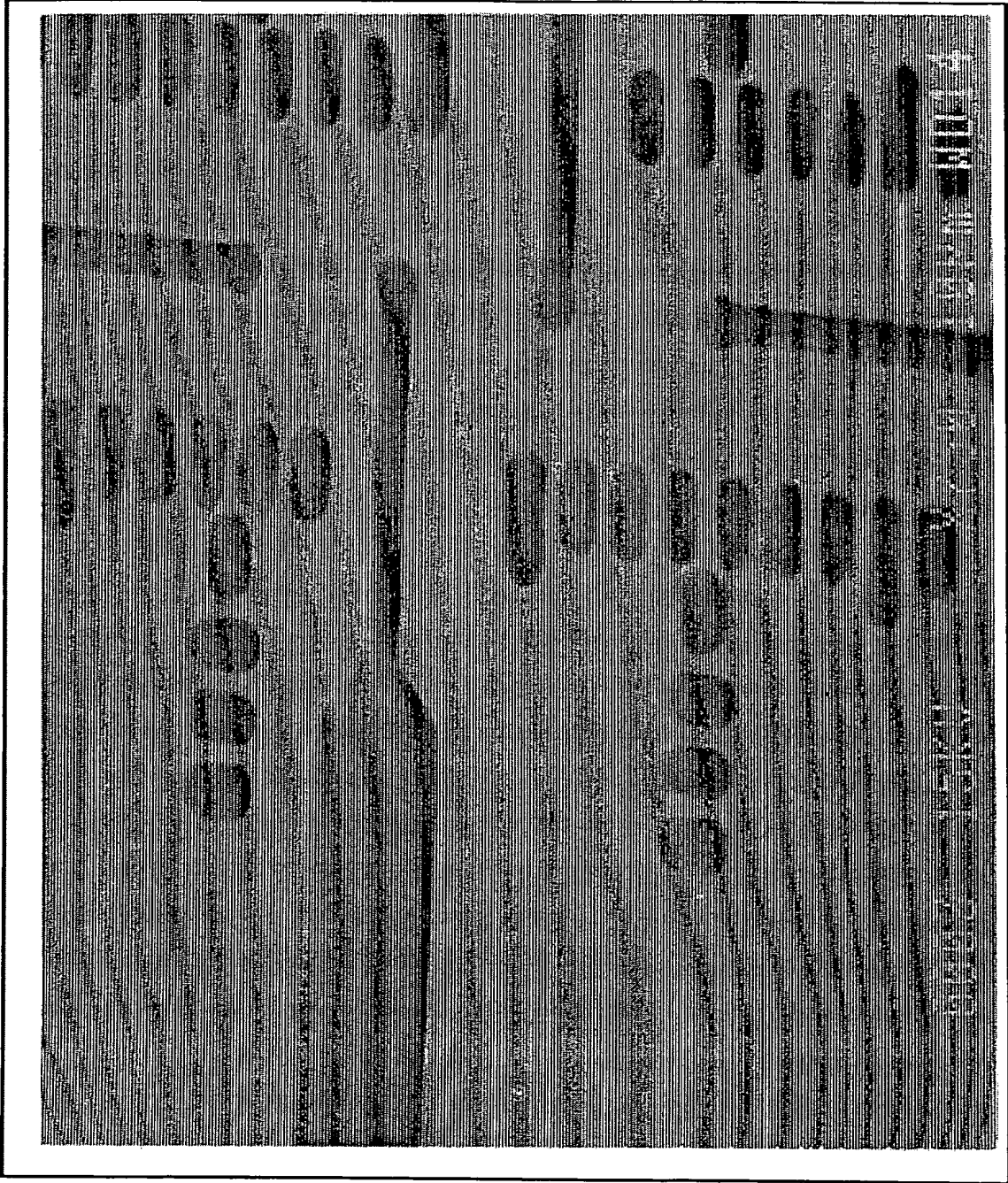
Fabrication (SEM Pictures)

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Close up of inkwell layout, reservoir and alignment marks

Fig. 21



Close up of inkwell layout and alignment marks

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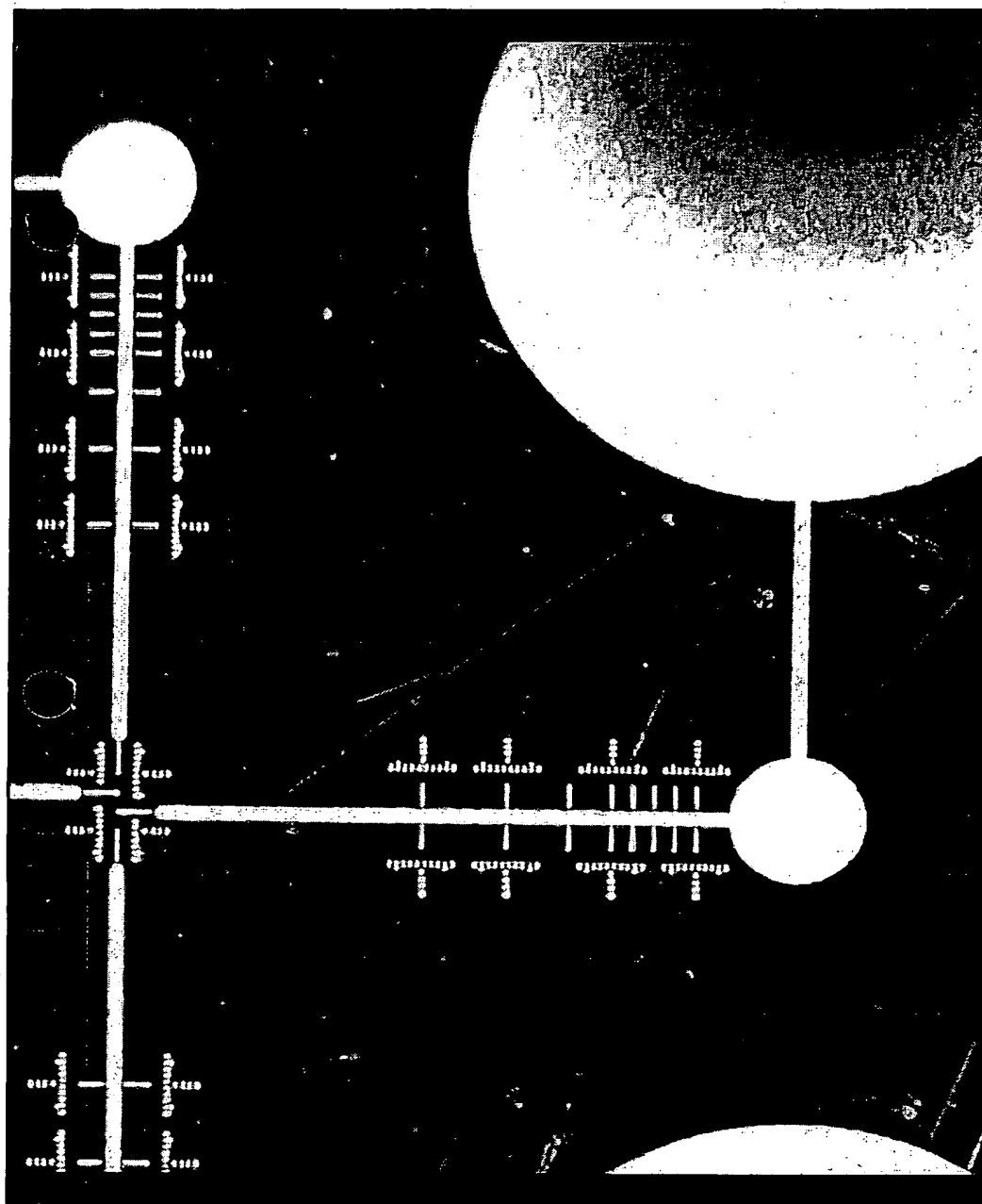


Fig. 23

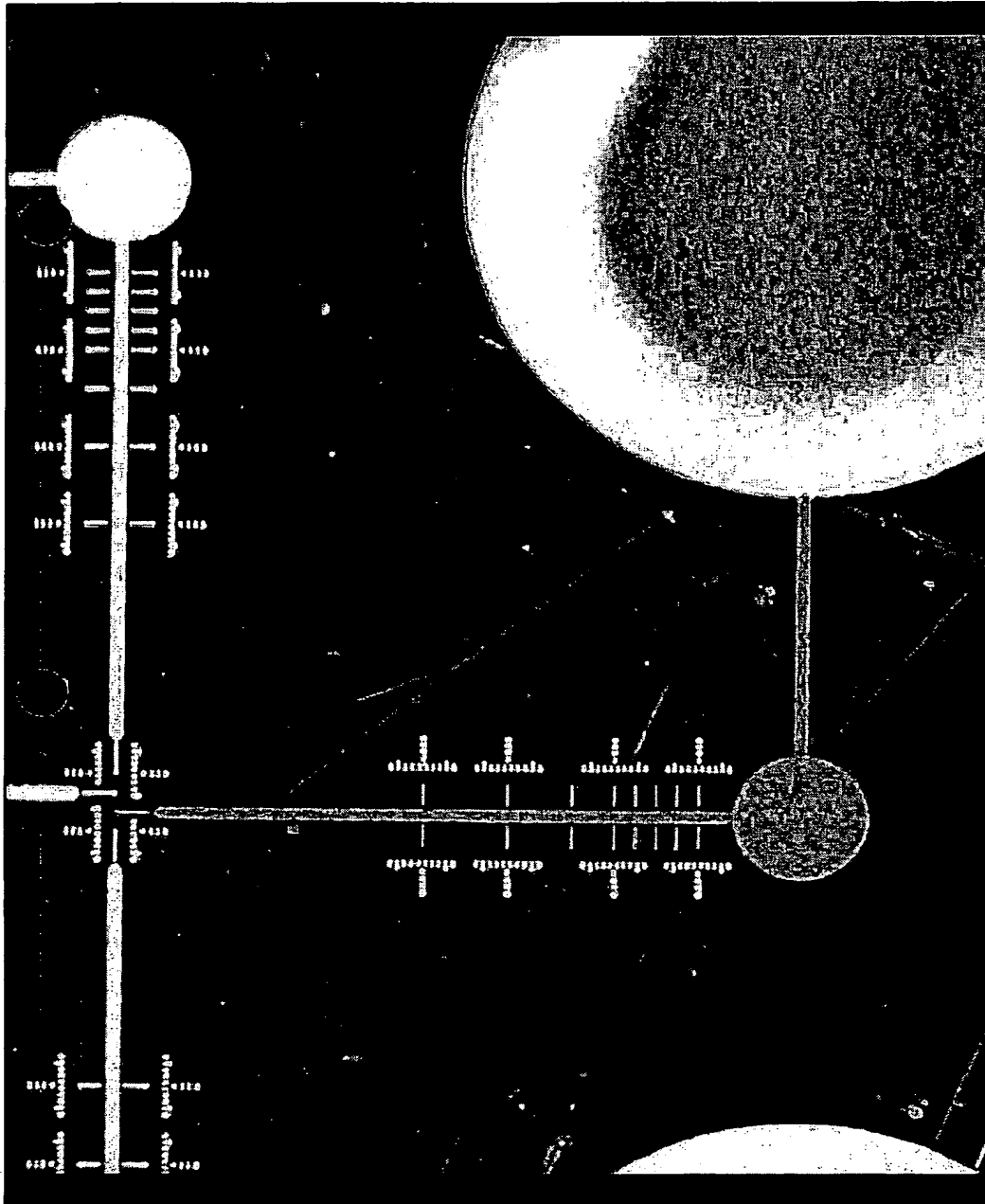


Fig. 24

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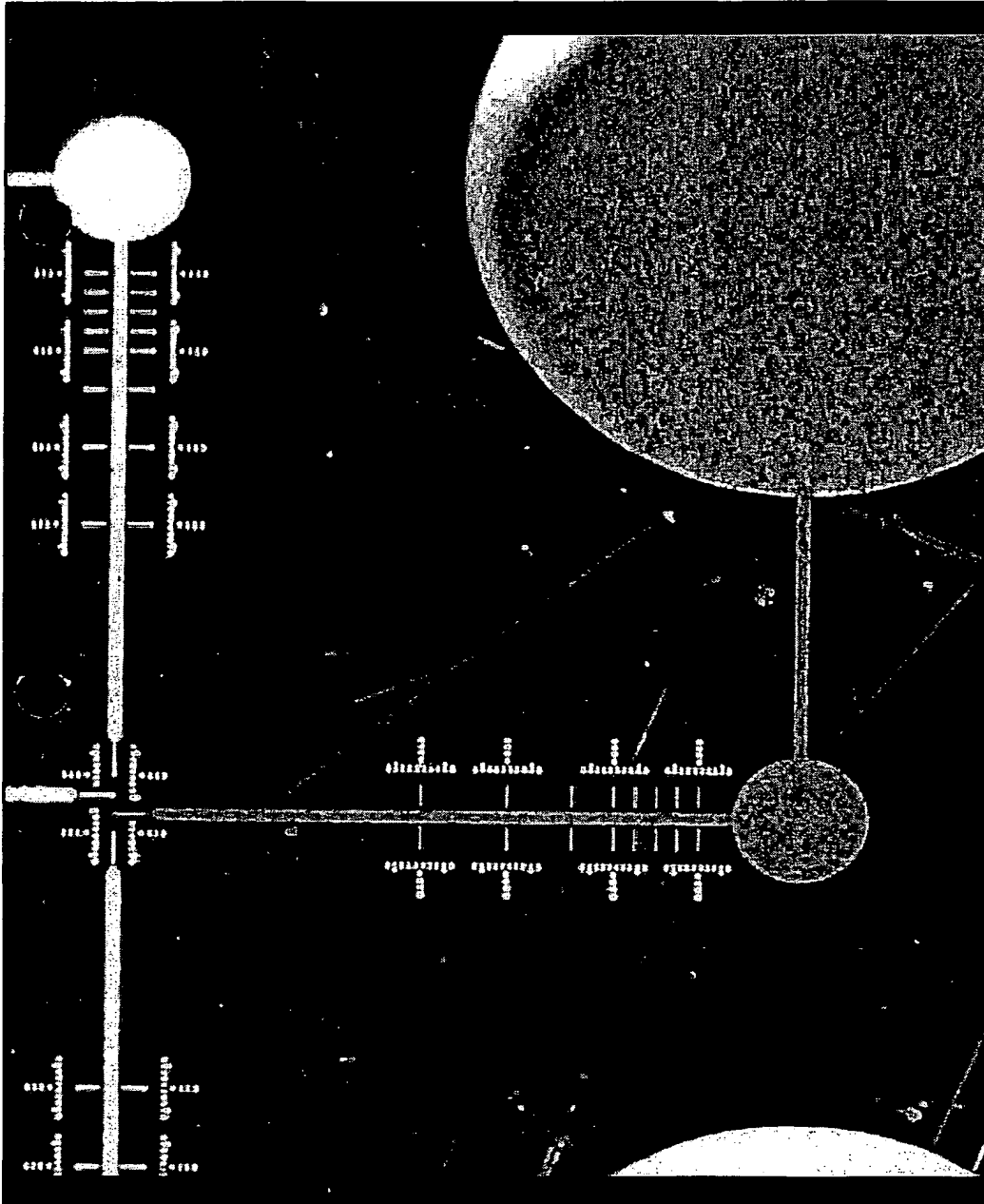


Fig. 25

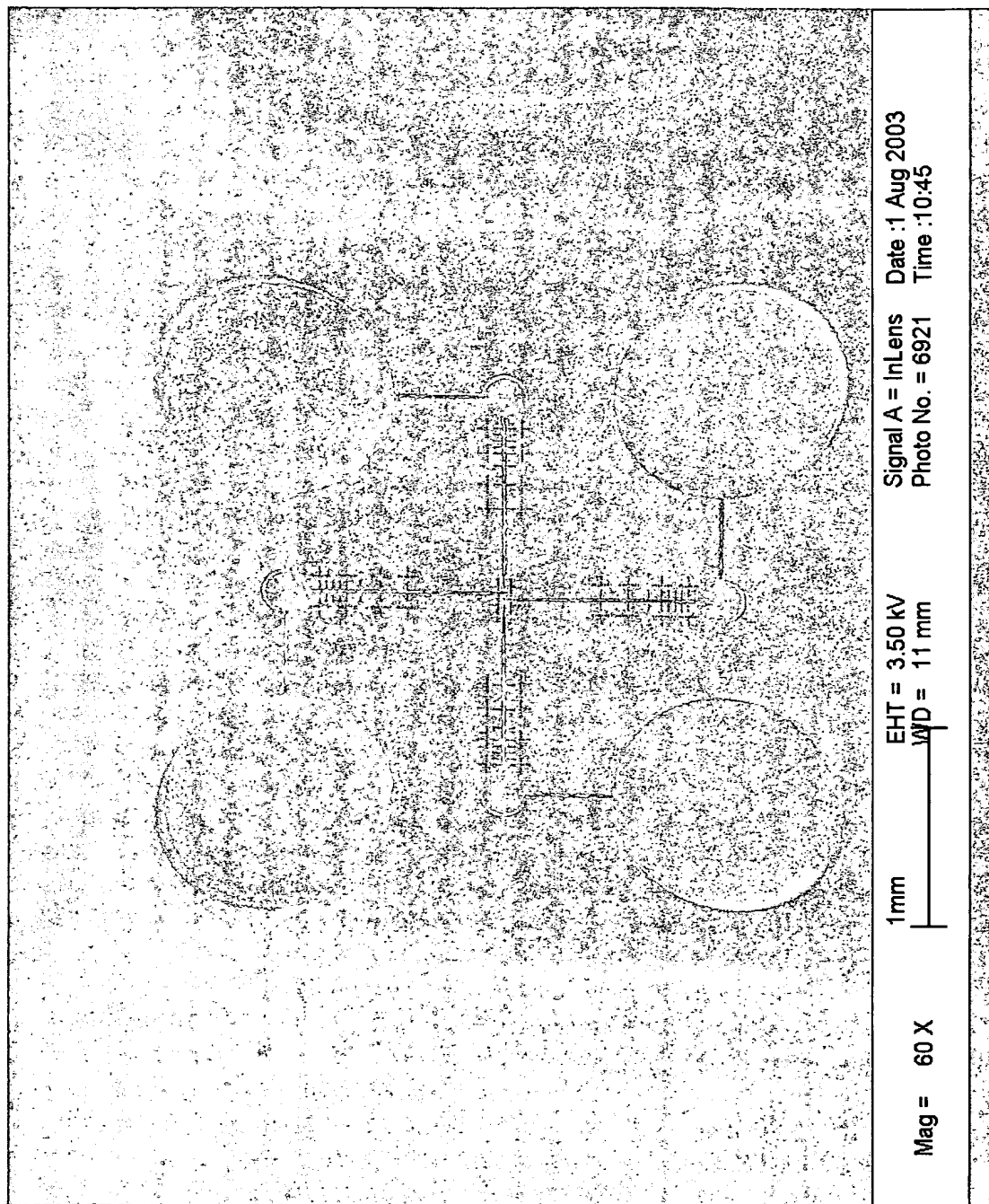


Fig. 26

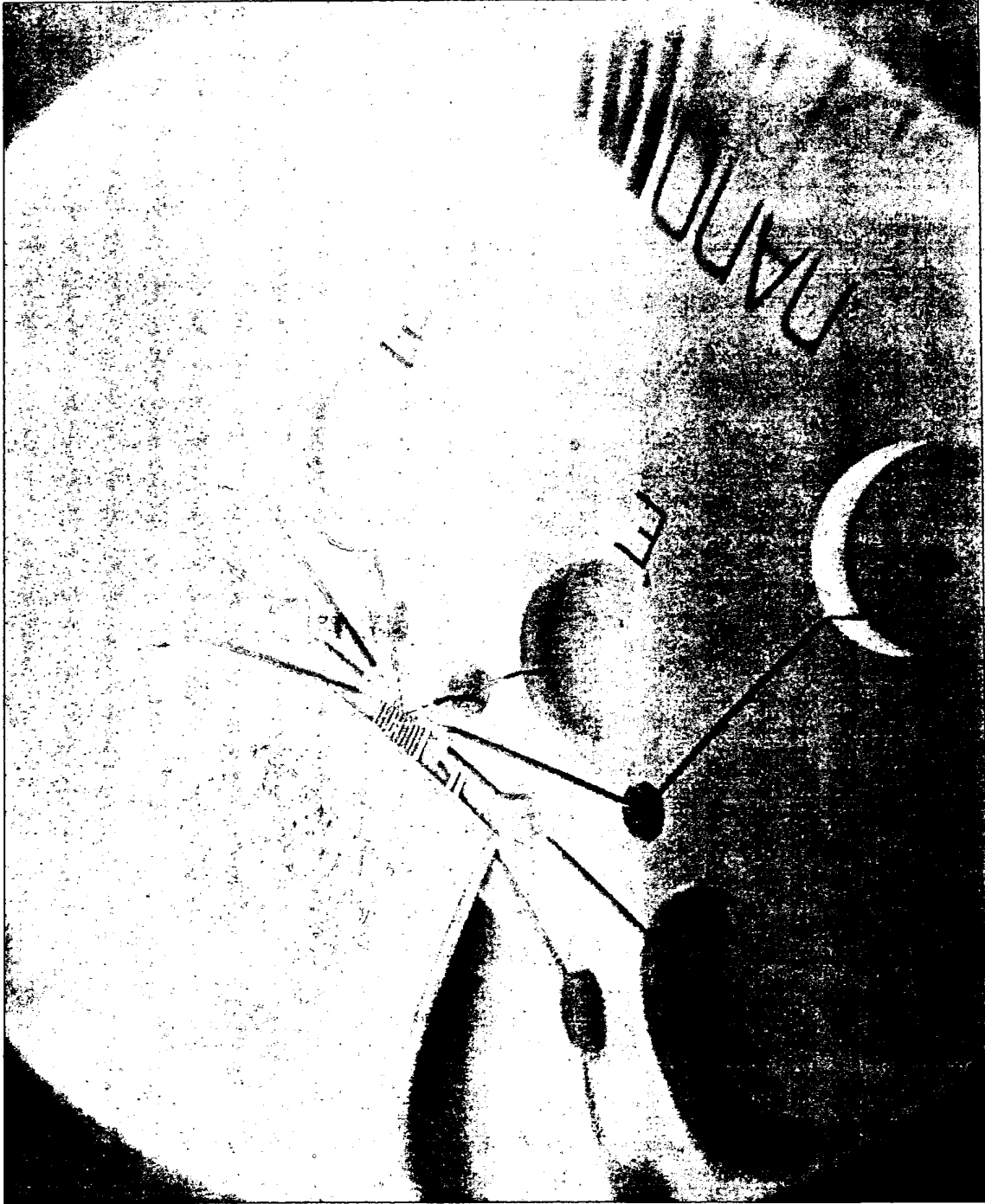
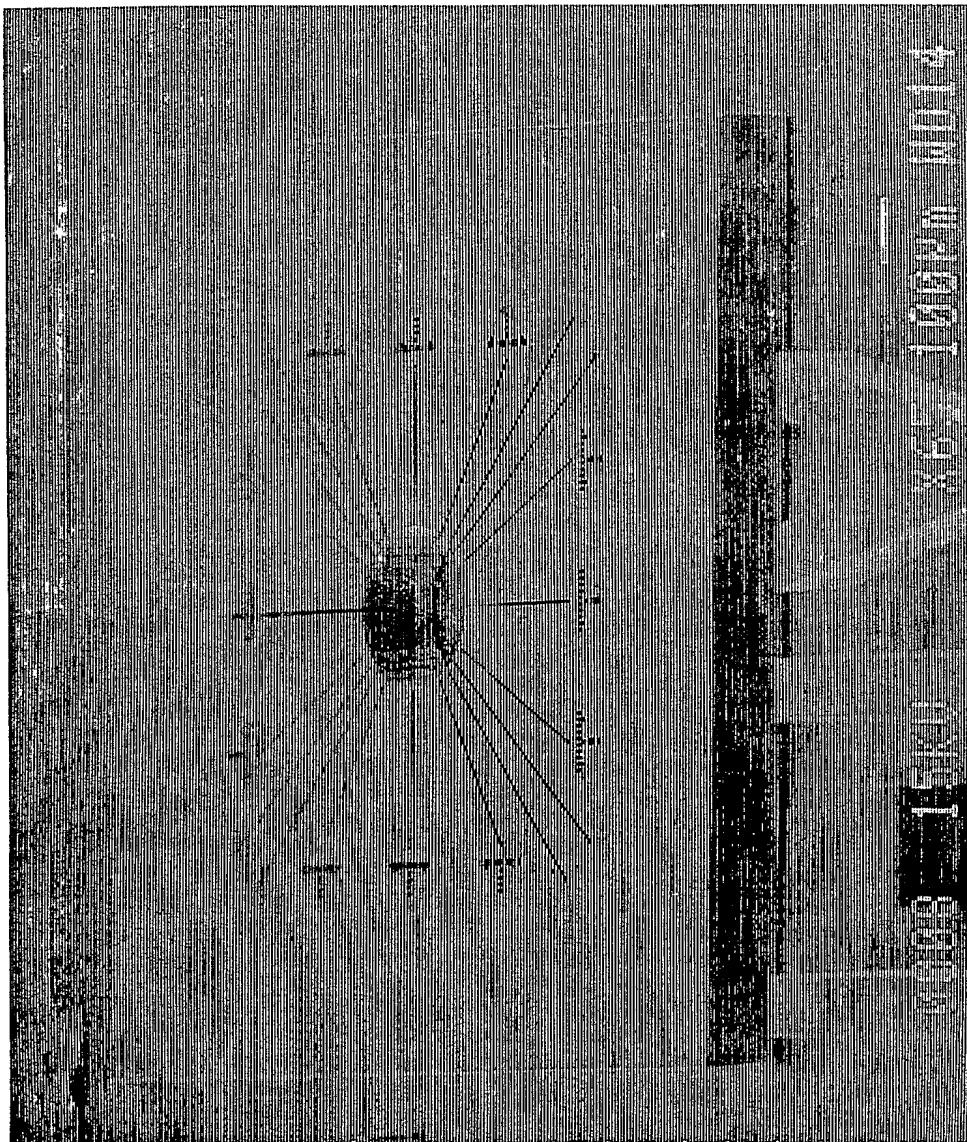


Fig. 27

Fig. 28



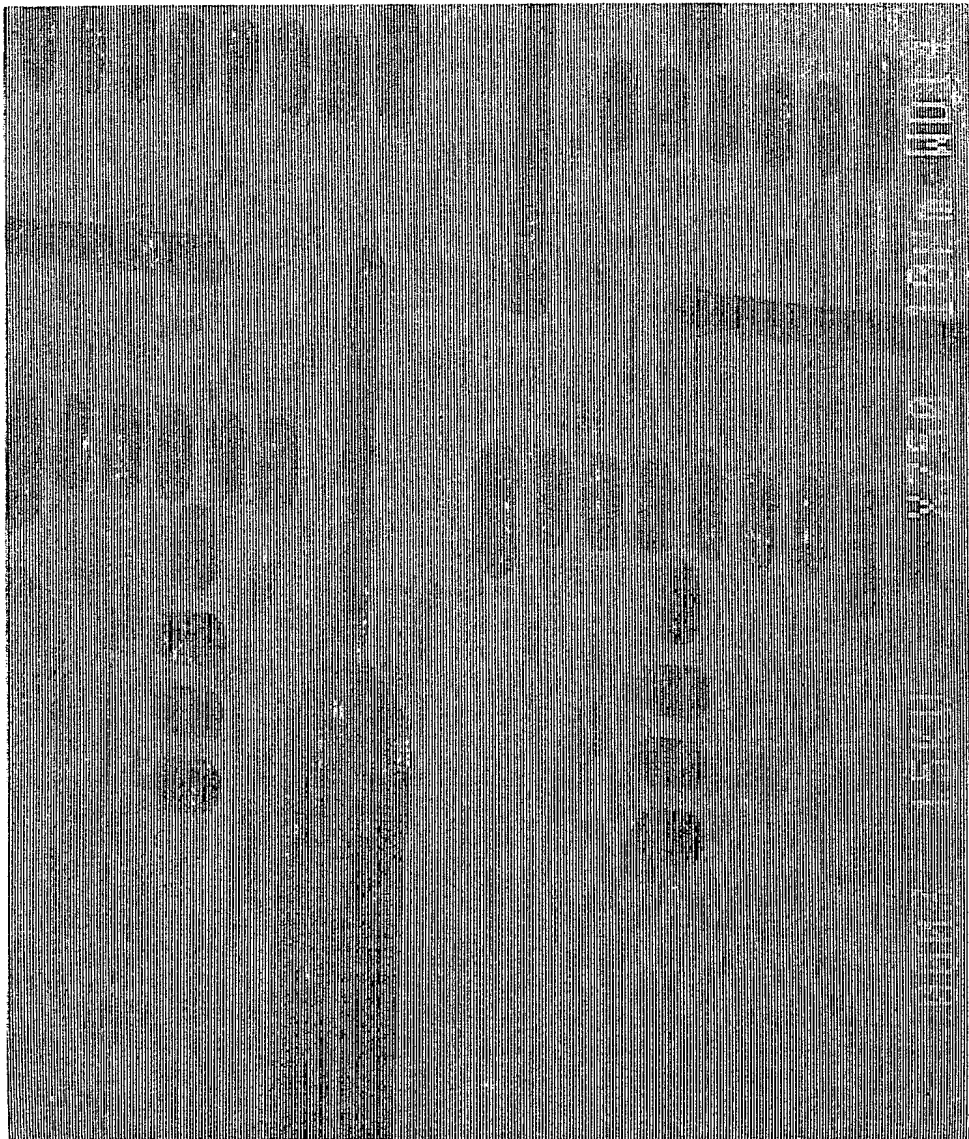
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Fig. 29



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Fig. 30



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Fig. 31

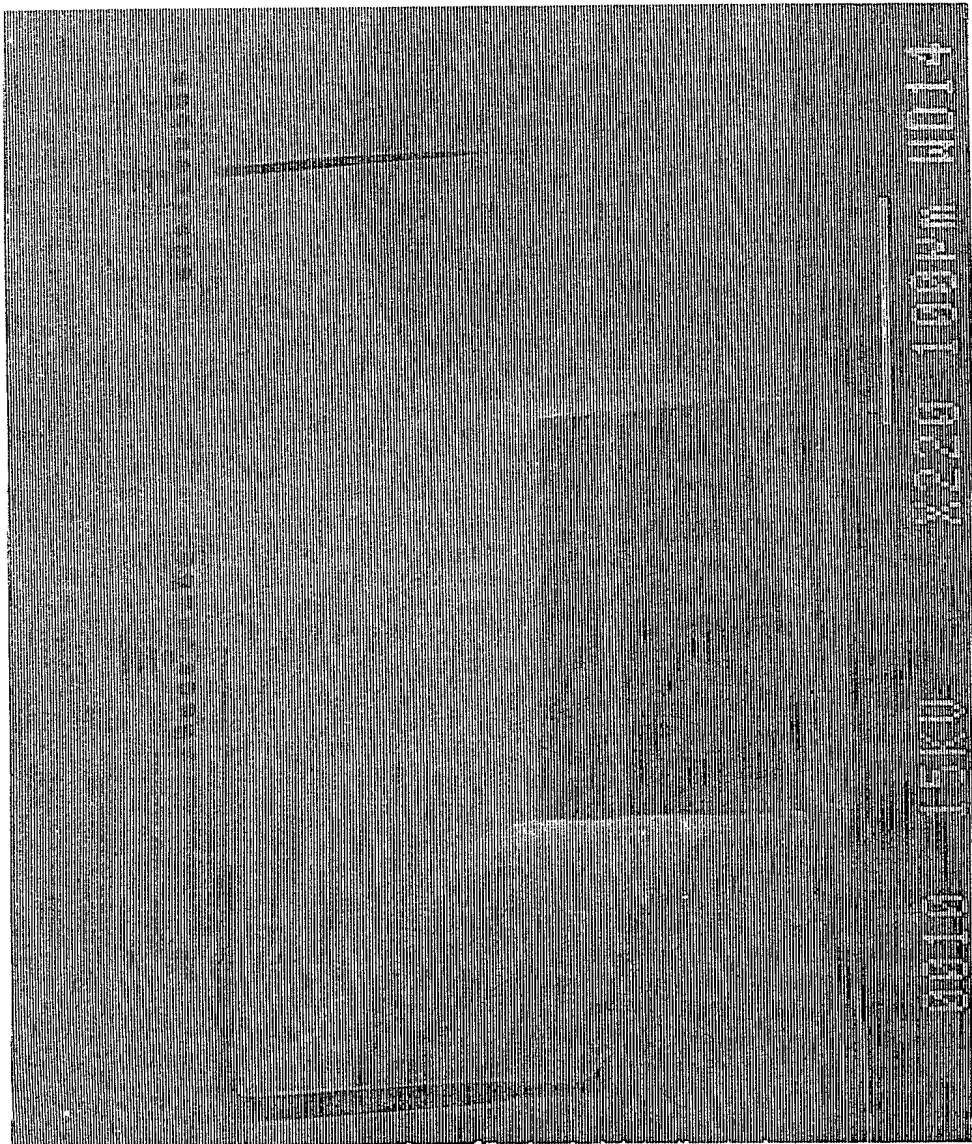


Fig. 32

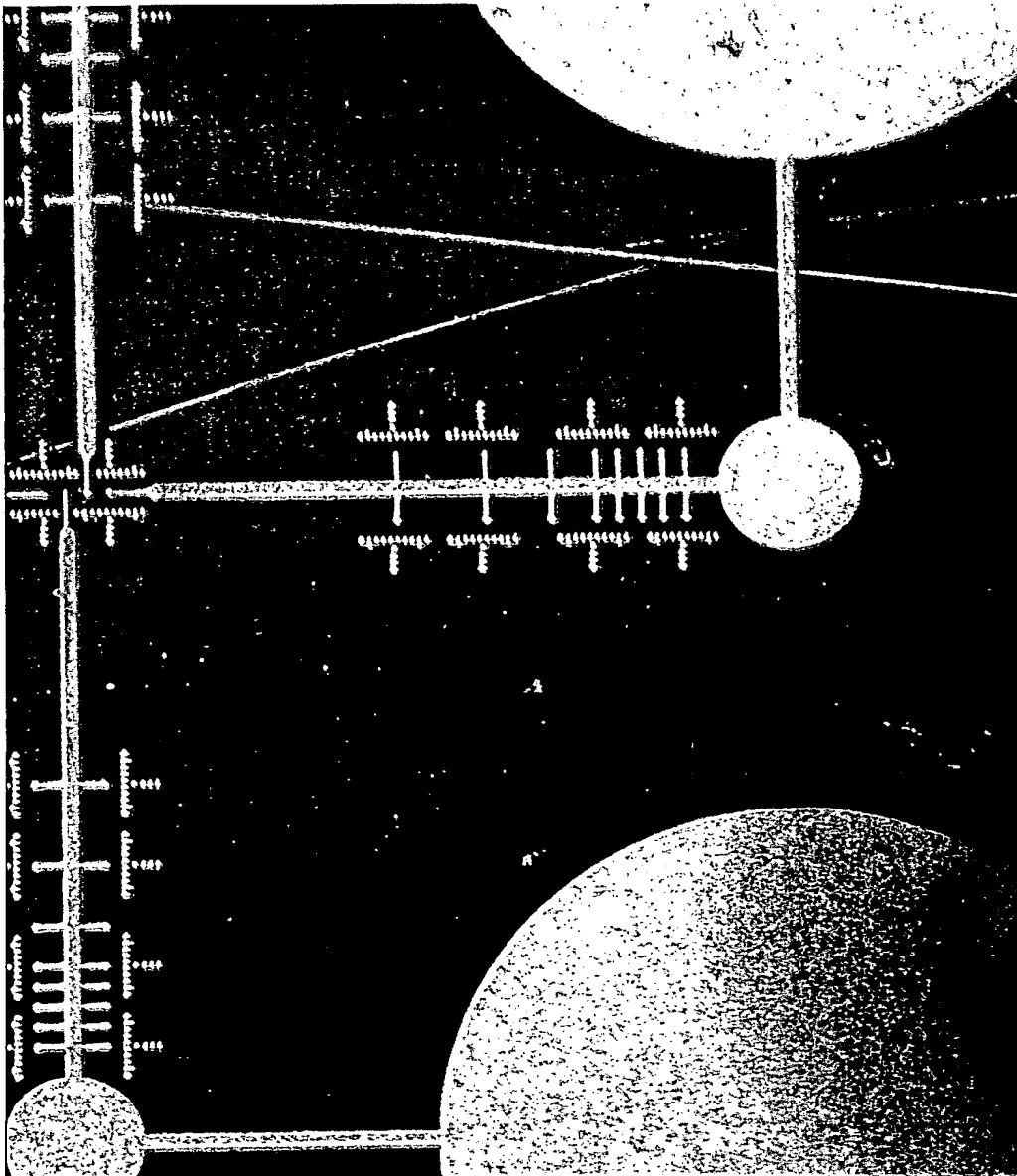


Fig. 33

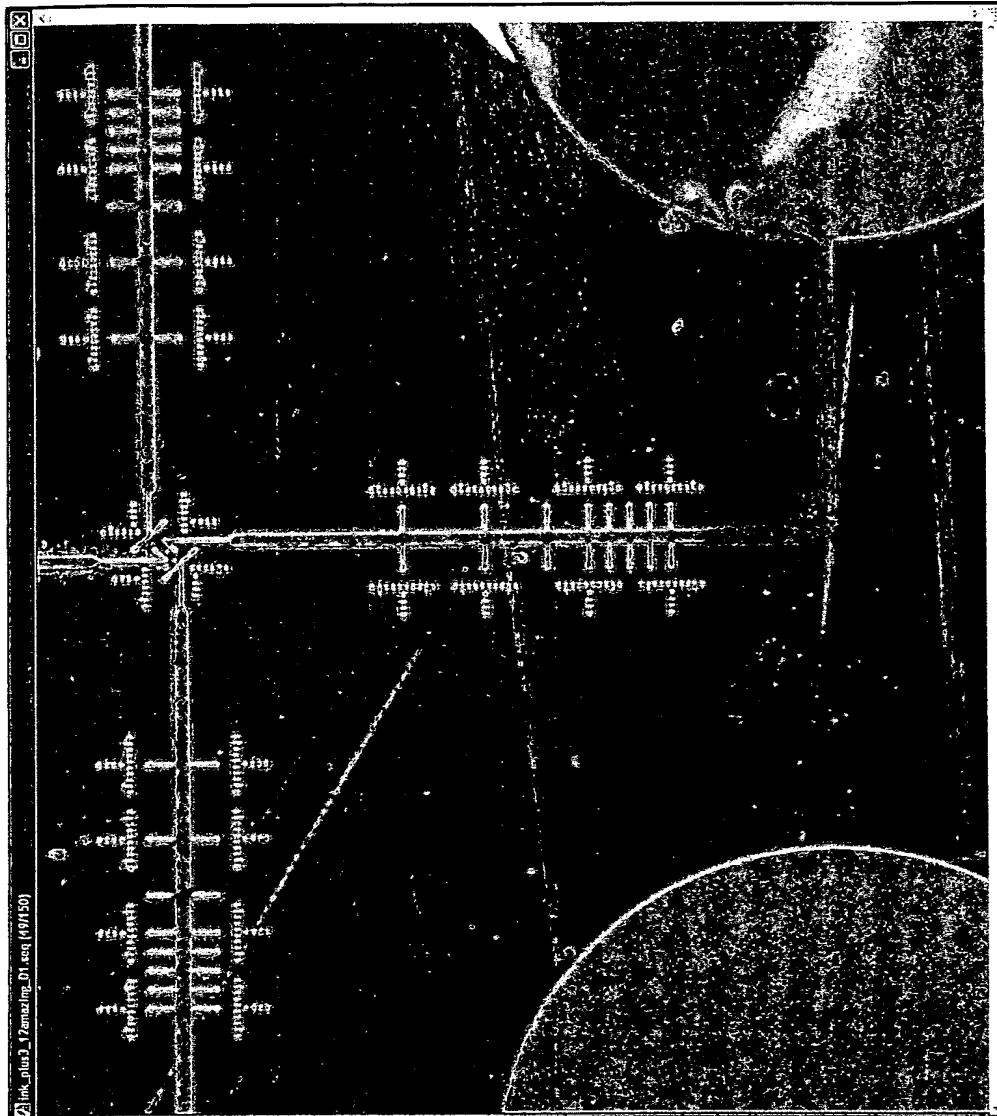
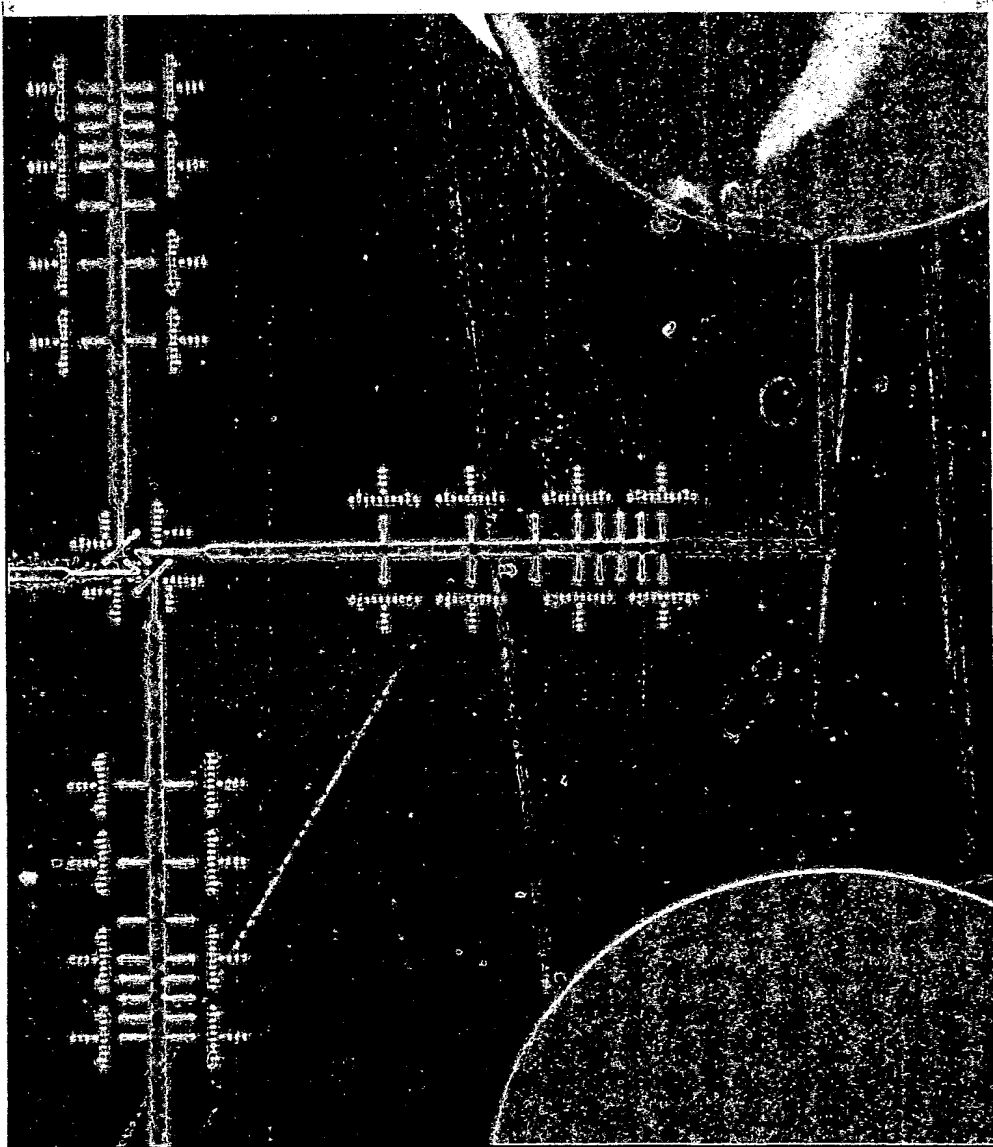


Fig. 34



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Fig. 35

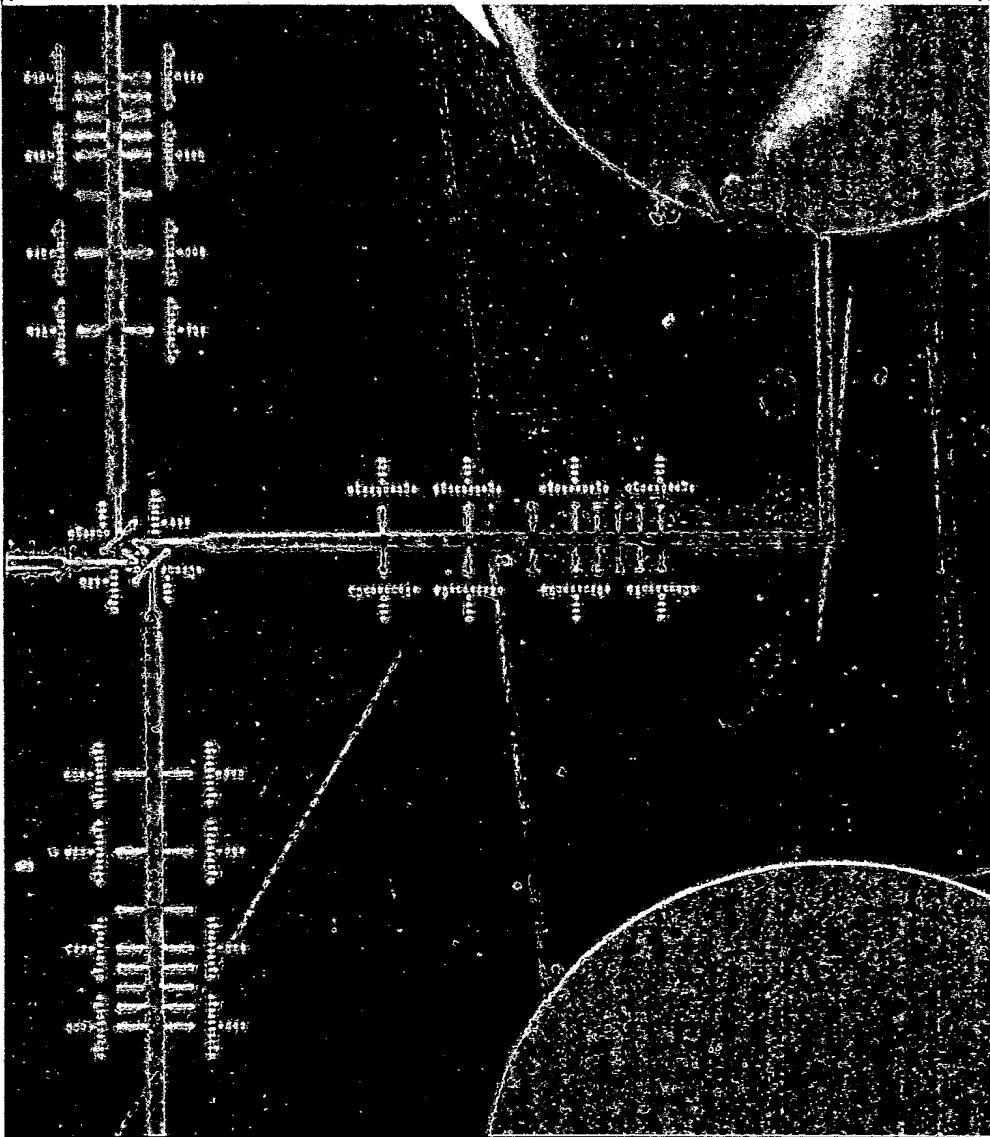


Fig. 36

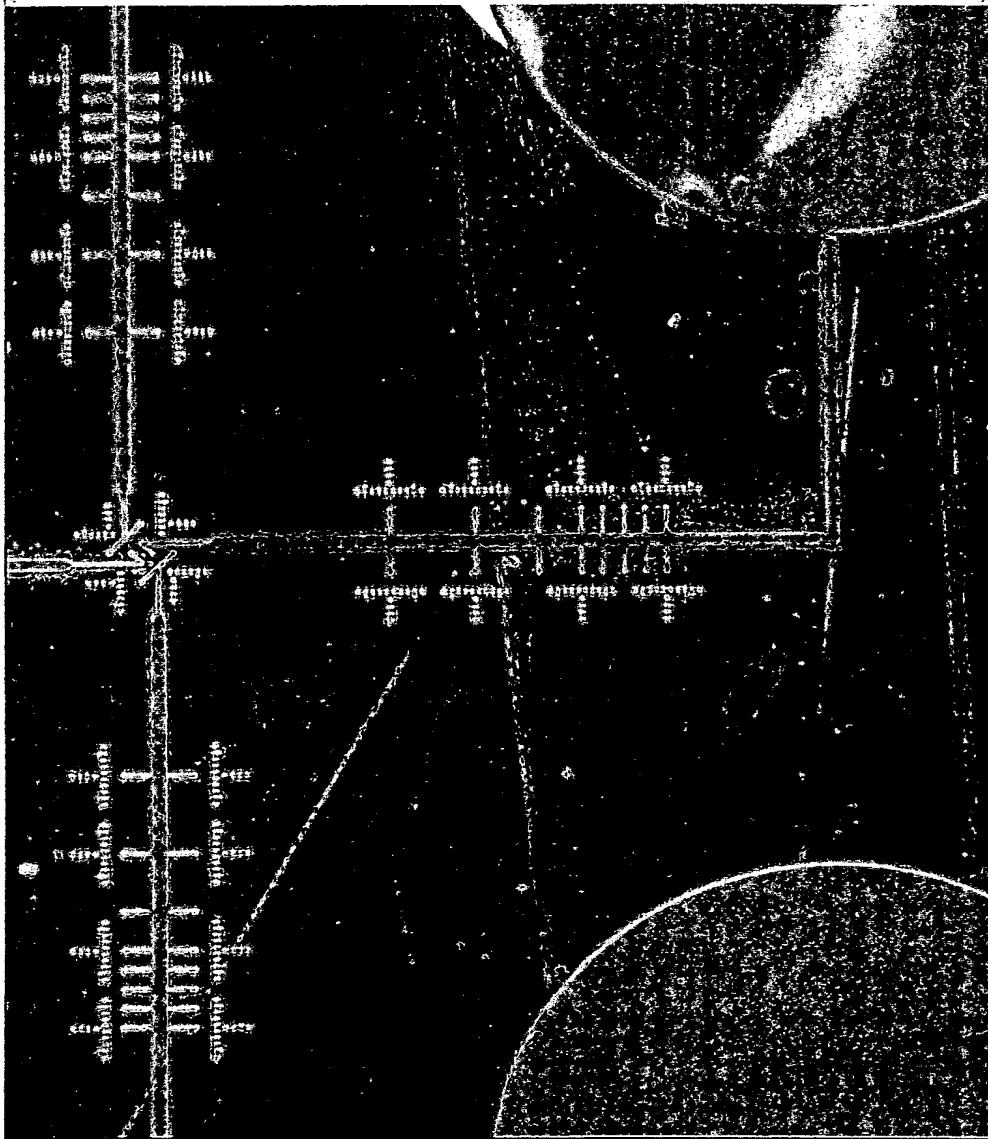




Fig. 37A

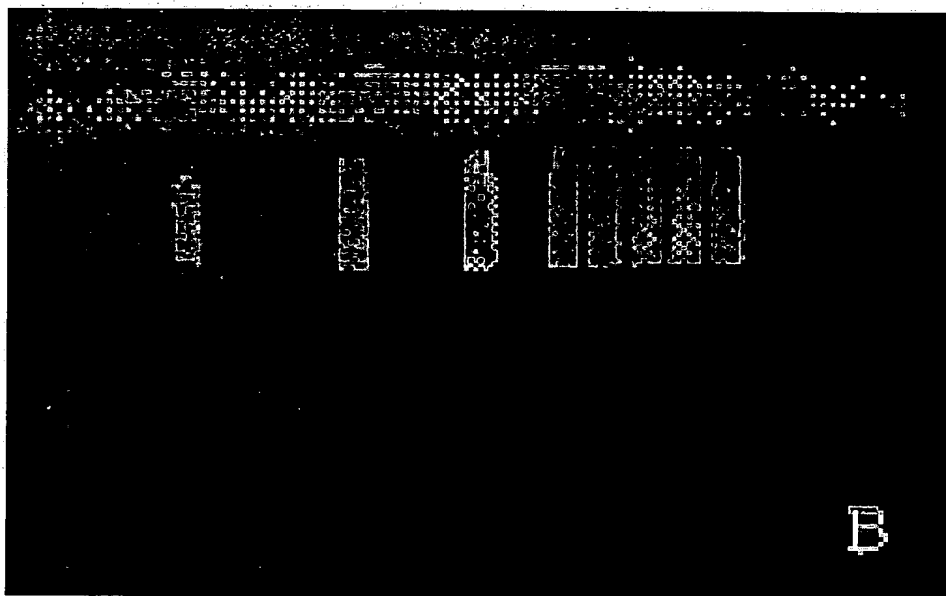


Fig. 37B

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Appl. No.: UNASSIGNED
Atty. Dkt. No.: 083847-0203

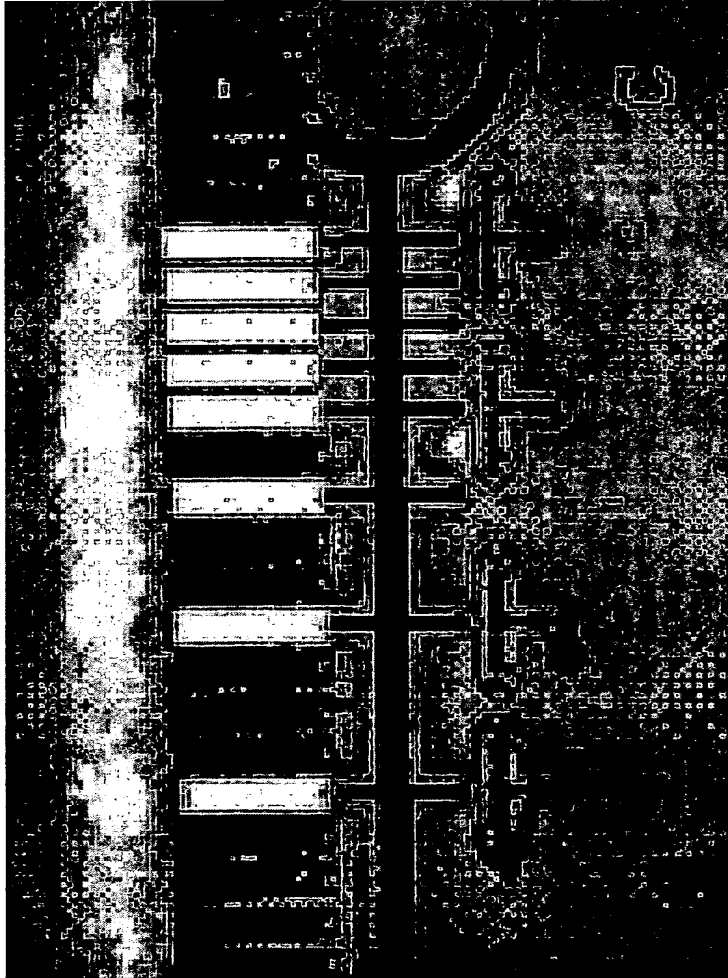


Fig. 37C

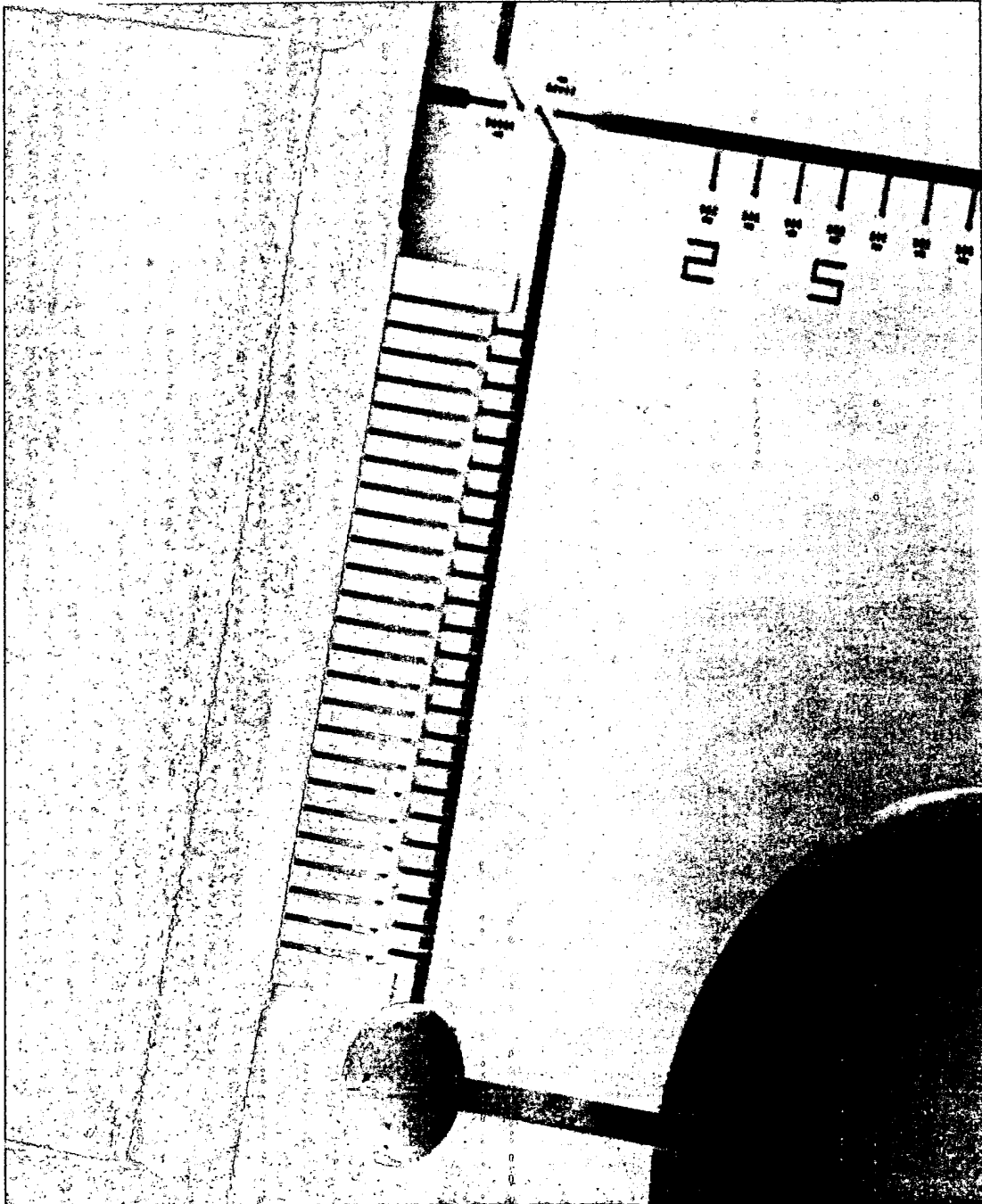


Fig. 38

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Inventor(s): Sylvain CRUCHON-DUPEYRAT
Appl. No.: UNASSIGNED
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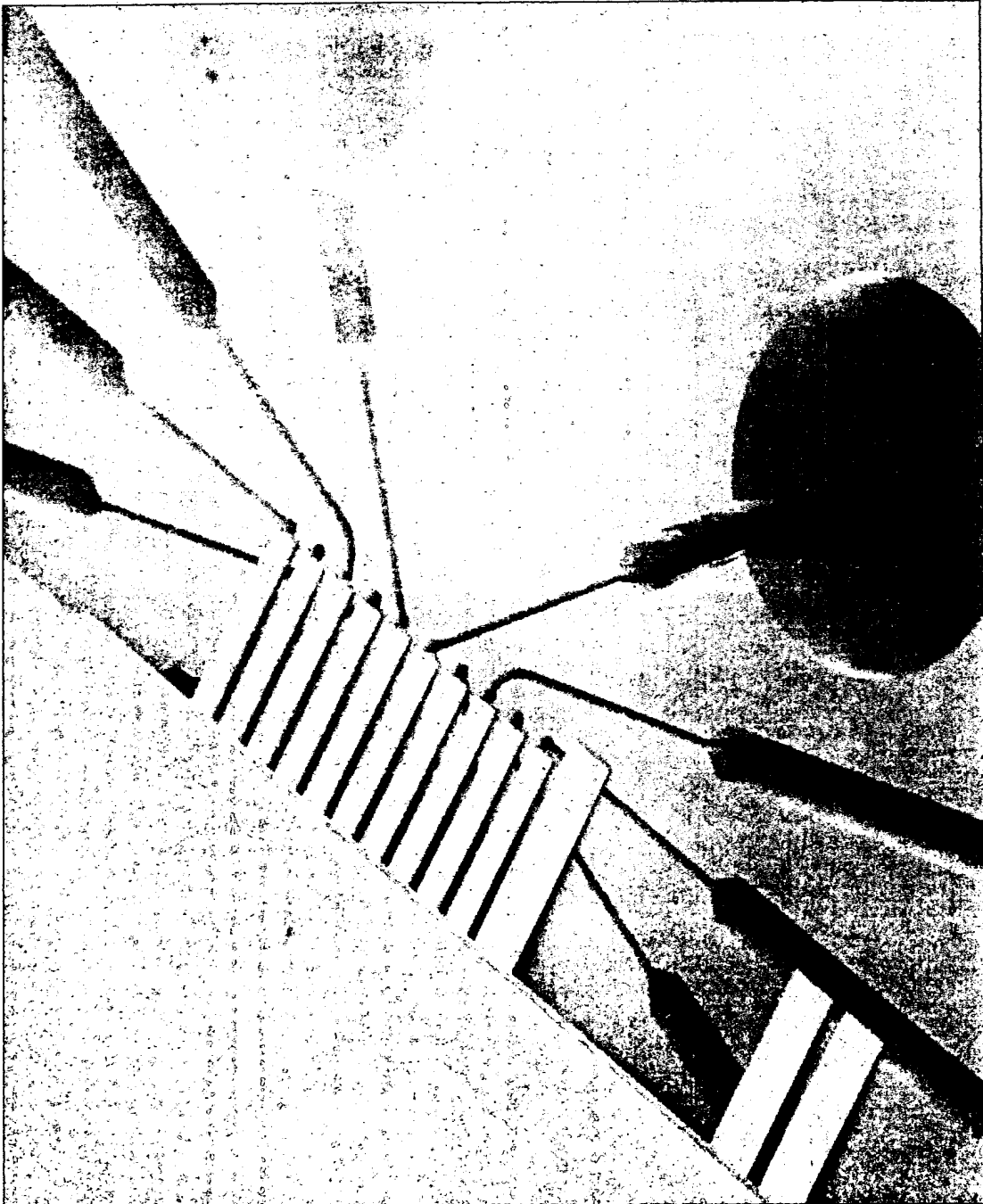
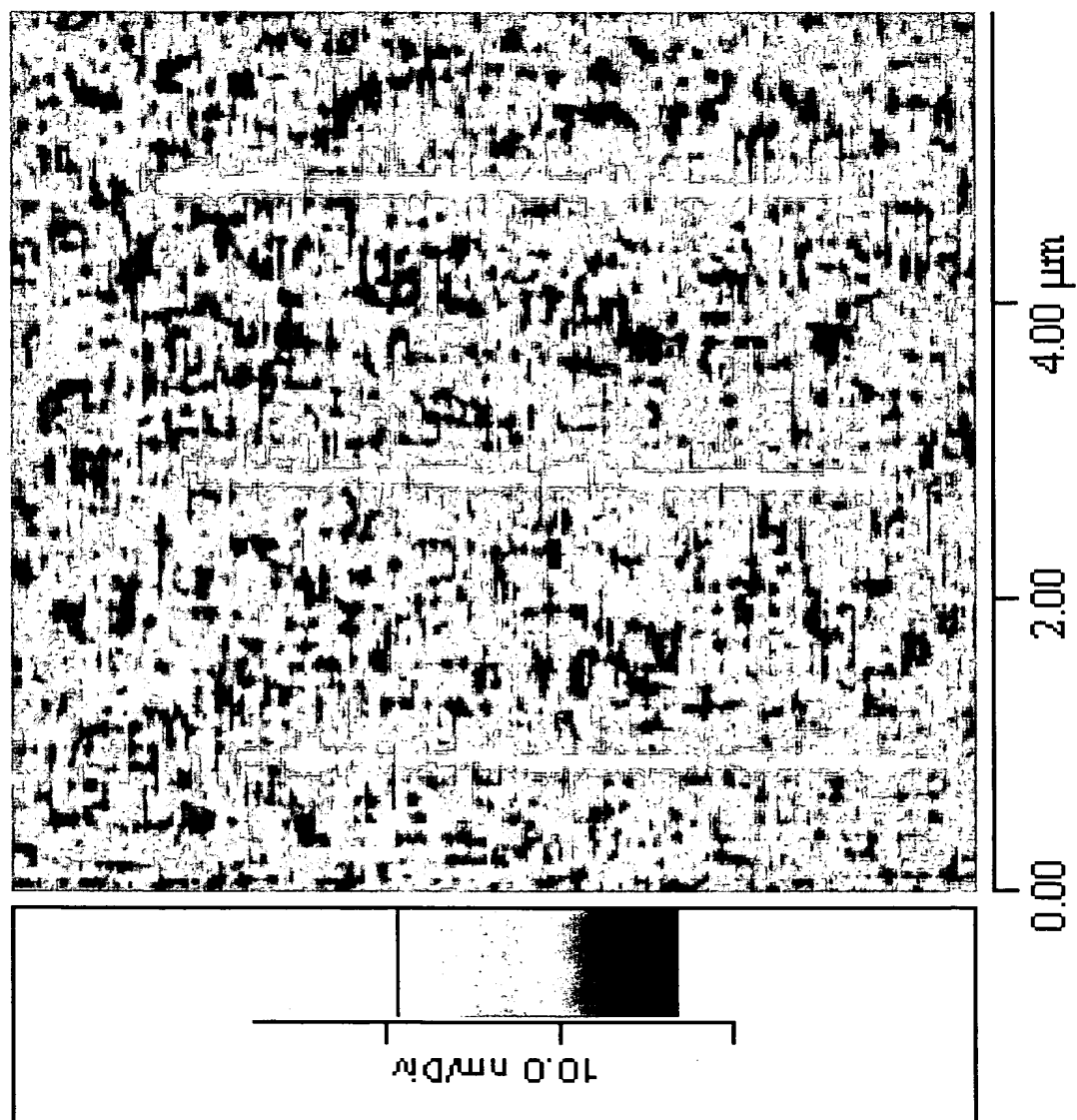


Fig. 39

(18,209) x: 0.420 μm y: 4.873 μm z: 0.009362 μm



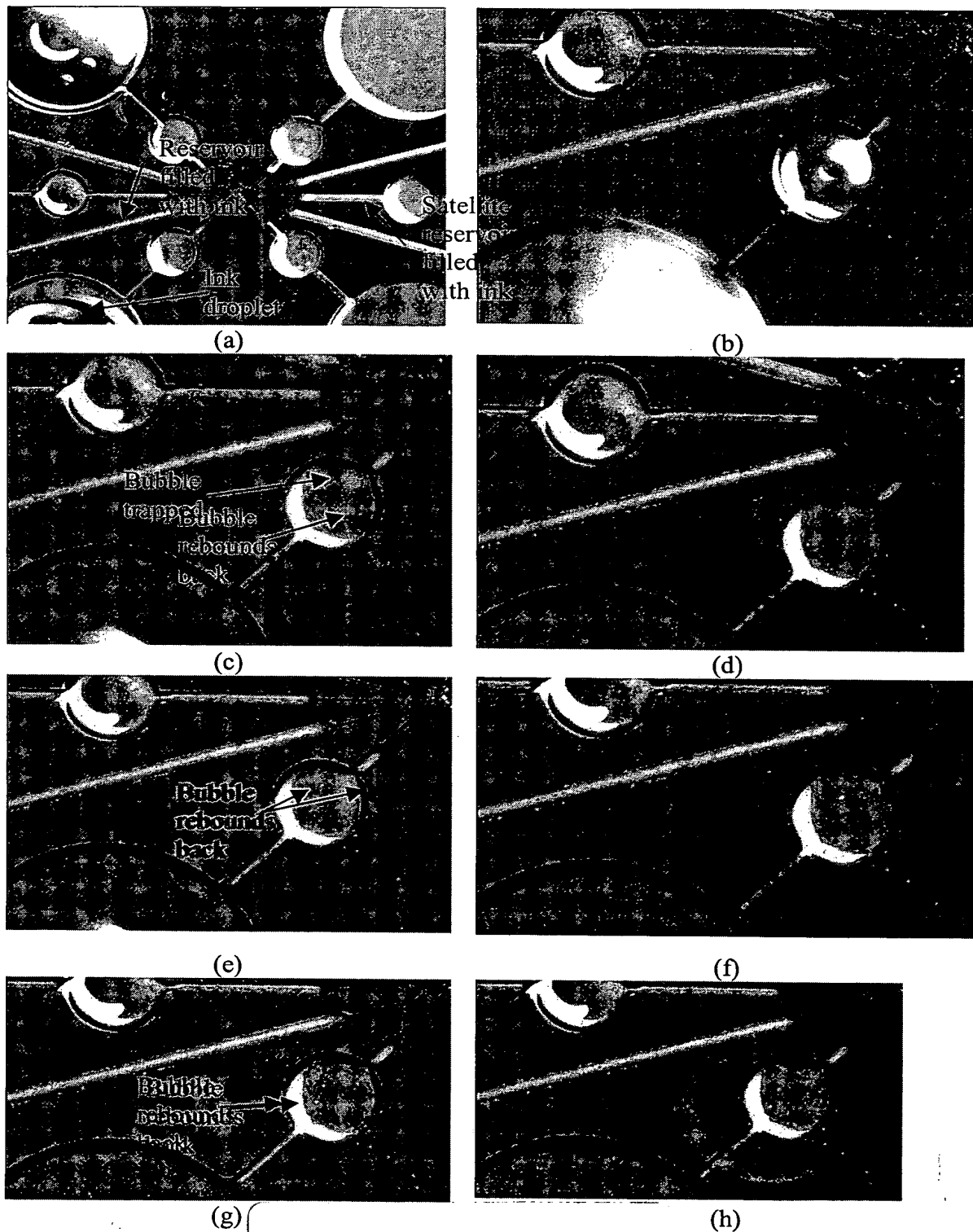


Fig. 41

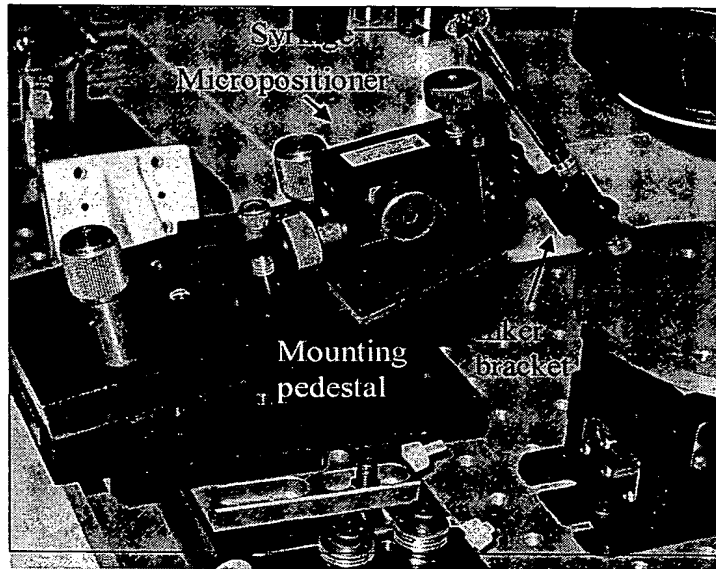


Fig. 42

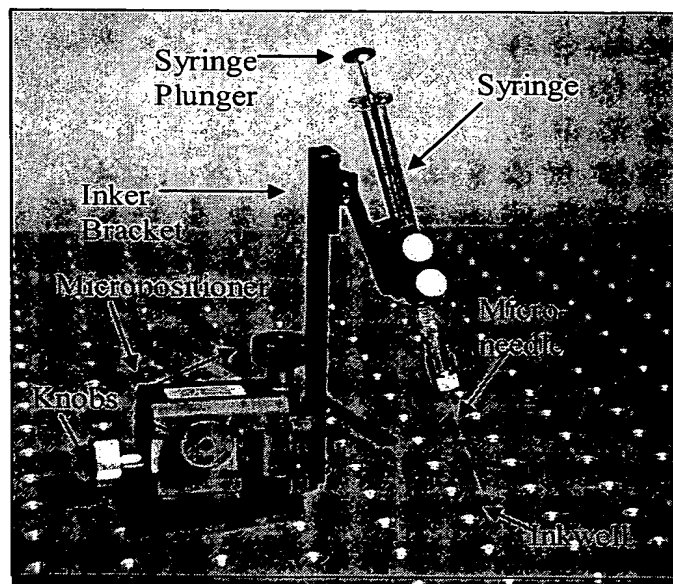


Fig. 43